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TRAIL & *Landscape*

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The Ottawa Field - Naturalists' Club

— Founded 1879 —

President

Daniel F. Brunton

Objectives of the Club: To promote the appreciation, preservation and conservation of Canada's natural heritage; to encourage investigation and publish the results of research in all fields of natural history and to diffuse information on these fields as widely as possible; to support and co-operate with organizations engaged in preserving, maintaining or restoring environments of high quality for living things.

Club Publications: THE CANADIAN FIELD-NATURALIST, devoted to publishing research in natural history; TRAIL & LANDSCAPE, a non-technical publication of general interest to local naturalists. THE SHRIKE, a local birding newsletter, is available by separate subscription.

Field Trips, Lectures and other natural history activities are arranged for local members. See "Coming Events" in this issue.

Membership Fees: Individual (yearly) \$13

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Members' Soiree

Help make this another great evening by contributing your collections, memorabilia, slides, photographs and art to the Conservation Exhibition. Those wishing to contribute, please contact one of the following people before April 9:

Central Ottawa: Paul Catling (996-1665 during work hours)
Western Ottawa: Norma Johnston (729-7828)
Eastern Ottawa: Cam Osler (741-0199)
Southern Ottawa: Rick Leavens (521-1254)

If you have any questions or suggestions, contact Peter Hall (733-0698).

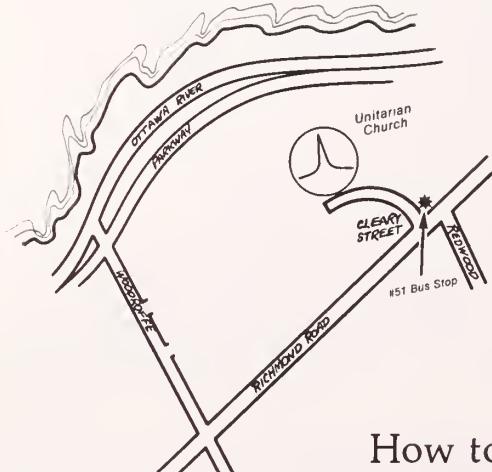
Prints and artwork must be mounted for easy hanging.

There will be a prize awarded for the best Macoun Club entry in each of the three age classes* for each of the three categories of Photography, Art, and Collections and Memorabilia. Any young people who are Club members but not Macoun members are also welcome to compete in the appropriate age classes.

*Junior (grades 3 to 6); Intermediate (grades 7 and 8); Senior (grades 9 to 13).

Bring your unknowns to the Soirée; there will be a table to which you can bring your unknowns (within reason) to see if others can offer identification.

See centrefold for complete information on the Soirée.



How to Get to the Soirée

President's Message

A number of years ago an Ad Hoc Committee was struck by The Ottawa Field-Naturalists' Club Council to investigate the whole business of the Club's publications - their why's, wherefores and so-whats! The Committee examined the question from many angles over a considerable period of time, discussed publications with various involved and expert people both inside and outside the Club, and ultimately was able to present a report to the Club. Following further deliberation and discussion by the Council (within committees and in an open special meeting of the Council), a publications policy was approved. It has been submitted to *The Canadian Field-Naturalist* and will be published in an up-coming issue.

The completion of a publications policy is an extremely important event. The Ottawa Field-Naturalists' Club has a magnificent record of publishing important natural sciences literature (and *Trail & Landscape* is a significant part of that record). We have functioned for over a century on an ad hoc basis (and well too), but with larger productions, greater expenses, larger circulations and increased overall responsibility, it was time to take a good hard look at what we were doing, how we were doing it, and where the Club was capable of seeing its publications going. A new feature is the inclusion of guidelines for the handling of special publications. Now it's all down in black and white, and will provide guidance and direction for many years.

Another important event of late was our offer to host the 1983 Federation of Ontario Naturalists' Conference. The previously-accepted hosts had to withdraw recently, and the Federation was left holding the bag. Just the sort of challenge the Ottawa Field-Naturalists' Club thrives on! As you will see in the material accompanying this issue, the Conference will be held in early June at Carleton University. We are hoping to have the most active and most meaningful Conference ever held; we want the FON'ers to leave Ottawa with distinct memories of all the terrific things they saw and did - and regret that they couldn't attend the other eight or ten programs that they had to miss! I believe we already have the most involved outings program of any FON conference to date - and that's just the beginning. It should be a great deal of fun for local naturalists too. We'll have the opportunity of meeting other "nats" from across the province, as well as exploring some of our special places with them, and will benefit from the many exhibits, publications and sessions that will be available. I hope that there's a large turnout of Ottawa Naturalists for this conference; it should be a weekend to remember.

When Alan Pope, Ontario Minister of Natural Resources, came to Ottawa in December on his unprecedented cross-province tour to hear, first-hand, the resource management concerns of the people of the province, a large number of Ottawa Field-Naturalists turned out, despite the winter's first blizzard. The message to the Minister that evening was clearly pro-parks and pro-wetlands conservation. Roger Taylor and I spoke on behalf of the Club. We were followed by representatives of the FON, National and Provincial Parks Association, Canadian Nature Federation, and a large number of conservation/preservation-oriented persons. It was, all in all, a very positive session, and all those who attended can be pleased that their voice helped deliver a strong, clear, pro-conservation message.

So, as you can see, the Club remains active on many fronts. Let's hope the spring and summer bring us even more positive results and interesting opportunities.

Dan Brunton

Council Report

Bill Gummer

The 104th Annual Business Meeting was held on January 11 at the National Museum of Natural Sciences. Fifty Club members were present, the somewhat small turnout reflecting, perhaps, the weather and an unfortunate delay in mail delivery of *Trail & Landscape* with the meeting notice. Those who came were treated to the film *World in a Marsh* with its remarkable photography and graphic portrayal of survival in a hungry world. Refreshments followed thanks to Eileen Evans and her helpers.

The Club has operated at a high visibility level during the year, as Dan Brunton has already noted above, and highlights are difficult to select. There are several signs of the growth of Club activities: more detailed *President's Messages*, frequent mention of Club expertise participating in environmental issues, and even the size of *Trail & Landscape* itself; 152 pages in Volume 12, 184 pages in Volumes 13 and 14, and 164 pages in Volumes 15 and 16.

Memberships at 1246 compare favourably with last year's 1223. With 295 family memberships, the total Club membership has been estimated to be 1550.

The Club is deeply indebted to the National Museum of Natural Sciences for providing meeting rooms and the Dinobus for lectures and excursions.

Club Officers, Members of the Council and Committee Chairmen

The following slate of officers and members of the Council were presented by the Nominating Committee and approved by the members:

President	Dan Brunton (829-7307)
Vice-President	Paul Catling (996-1665)
Vice-President	Ken Strang (733-7695)
Recording Secretary	Frank Pope (829-1281)
Corresponding Secretary	Bill Gummer (596-1148)
Treasurer	Paul Ward (722-1203)

Other Council Members: Ron Bedford, Barbara Campbell, Bill Cody, Francis Cook, Stephen Darbyshire, Ellaine Dickson, Stephen Gawn, Chuck Gruchy, Gordon Hamre, Diana Laubitz, Betty Marwood, Ken Taylor, Roger Taylor, Peter Walker, Eugene Munroe, Philip Martin, Bill Arthurs. (Names of newcomers are underlined.)

The President thanks retiring council members, Sally Jackson, Jim Jackson, David Cameron and Rick Leavens, for their contributions.

At the first meeting of the new Council on January 17, the following Committee Chairmen were chosen:

Standing Committees

Awards	Bill Gummer (596-1148)
Conservation	Roger Taylor (731-9270)
Excursions and Lectures	Paul Catling (996-1665)
Finance	Ken Strang (733-7695)
Membership	Barbara Campbell (839-3418)
Publications	Ron Bedford (733-8826)

Other Committees

Birds	Tom Hanrahan (226-5400)
Education and Publicity	Ken Taylor (224-3928)
Macoun	Stephen Darbyshire (749-9317)
Nominating	Roger Taylor (731-9270)
Executive	Dan Brunton (829-7307)

Federation of Ontario Naturalists Report

Roger Taylor

The administration of the Federation of Ontario Naturalists (FON) is somewhat similar to that of The Ottawa Field-Naturalists' Club, but, because of the larger size of the organization, it does differ in some important ways. The most significant difference lies in the presence of a general manager and other full-time staff, who run the day-to-day operations at the FON headquarters, Locke House, in Toronto. The general manager is answerable to the Executive Committee, consisting of the officers of the FON and some other directors, which meets once a month and functions in a similar way to our Council. Then the Board of Directors meets every two months to oversee and ratify the Executive operations and to provide a voice for the various federated member clubs of the FON. The majority of directors are appointed representatives of the federated clubs. The Board of Directors is responsible ultimately for the administration of the FON and plays a role similar to that of the members attending our Annual Business Meeting.

At the November 27 meeting of the Board of Directors, several interesting topics were aired. An 1830s heritage home, Goodwin House, was acquired for the price of \$1 and installed on the Locke House property. Extensive repairs are needed and are being done by people from a correctional institute, under the watchful eye of FON General Manager, Mike Singleton. This house will provide much needed extra space for FON operations.

Some concern was expressed over the number of family memberships that were being converted to single memberships. In an effort to attract and hold family memberships, it is planned to put out a supplement to *Seasons* entitled *Things to do with Kids*.

A new record of warbler songs, covering all warblers found in North America, will be available soon, possibly in March. You should be able to purchase it at the FON Conference in June.

The Ottawa Field-Naturalists' Club was warmly thanked for stepping in at the last moment and taking on the task of hosting the 1983 FON Conference. Plans for this conference are, by the way, proceeding very smoothly. Do register early to avoid disappointment, as limited space is available on most excursions. The conference program and photo salon entry form are supplements to this issue of *Trail & Landscape*.

A report on the Breeding Bird Atlas indicated that over a thousand volunteers are now involved in this province-wide

project. Several Club members, and the Club's Bird Study Group, are included in that total.

The Nature Reserves Committee presented a fairly lengthy report and distributed copies of a newsletter, *Sanctuaries*, which it plans to send out to FON members. Included in the report was the suggestion that the committee might pursue actively the expansion of the FON system of reserves through purchase of highly significant biological sites in, among other places, eastern Ontario. We immediately suggested Alfred Bog, an area about which you will be hearing a lot more in the near future. The committee is tentatively planning a meeting in Ottawa fairly soon.

Finally, it would be remiss not to point out that the FON carries on an active role in conservation issues throughout Ontario. For example, the FON played a very important role in lobbying for support for the Monzon Report on proposed new candidate parks for Ontario, tabled by the Ministry of Natural Resources (MNR). (See *Provincial Parks Planning for Eastern Ontario* by Don Cuddy in *Trail & Landscape* 16(4): 199-202 (1982).) Also during the year several briefs were prepared on various issues. A recent one that was sent to me concerned environmental assessment for forest management and was submitted to the MNR in November, 1982. This document points out that since the passage of the Environmental Assessment Act in 1975, forest management on Crown Lands by the MNR has been exempted from environmental assessment. This assessment has just expired, and the brief addresses the need for a class environmental assessment for forest management and discusses the practicalities of such an assessment.

Stew Hamill will be producing the next *FON Report*, which will be based principally on the January 22 Board of Directors meeting. If you have any questions about the FON or concerns to be conveyed to the March 26 Board meeting, please do not hesitate to contact OFNC representative, Dan Brunton (829-7307), or Stew Hamill (992-5774), or me (731-9270). It is our job to represent Eastern Ontario, and we would like to hear from you.

Trail & Landscape Circulation

Circulation of the January-February issue was as follows: a total of 1084 copies was mailed, 1049 of them to members, subscribing libraries and other institutions in Canada. Thirty-five copies were sent outside Canada, 30 of them to the United States. The cost of postage for that mailing was \$54.67 (second class) for the 40-page issue.

Although members began to receive their copies of the January-February issue at Christmas time, those living east of the Rideau River had to wait until the middle of January for theirs. If this happens again, *please complain to the Post Office.* JMR

Raccoon Dogs

An Environmental Story with a Happy Ending

Roger Taylor

A little over two years ago I outlined The Ottawa Field-Naturalists' Club's involvement in the Raccoon Dog controversy, an important environmental problem that surfaced in September, 1980. (See *Trail & Landscape* 15(1): 4-6 (1981).) The Raccoon Dog (*Nyctereutes procyonoides*), is a native of eastern Asia, in Japan and on the mainland, and is highly prized for its fur. It is an omnivorous, hibernating canine and is not related to a raccoon. Its common name derives from its raccoon-like facial markings. Otherwise, it resembles a heavy-bodied, short-legged fox.

The Raccoon Dog is being farmed currently for its fur in several countries of Europe and, where it has escaped, has spread rapidly and developed into a major environmental pest. It is subject to rabies, and has a passion for ground-nesting birds, berries, grain and vegetables. It is destructive particularly of crops in the fall when it is fattening up prior to hibernation - hardly the type of animal to let loose in the Canadian environment.

On September 25, 1980, a firm called Supi Farms imported from Finland into southern Ontario a shipment of 135 Raccoon Dogs and installed them on a fur farm in Cookstown owned by Mrs. Karina Sjoblom, a landed immigrant from Finland. This shipment was entirely legal and was done with the blessing of both the federal and provincial departments of agriculture. Subsequently, the majority owner of Supi Farms, Mrs. Salma Haatama, another Finnish landed immigrant, transferred the animals to a new facility in Madoc.

Naturalists in Ontario learned of the impending arrival of the Raccoon Dogs only three days before the date, and, as I pointed out in the aforementioned article, efforts to prevent their arrival and subsequent early negotiations with Supi Farms proved to be entirely futile. I concluded the article with the pessimistic suggestion that some time in the future you could expect to read about the first sighting of a Raccoon Dog in the Ottawa area. Fortunately that pessimistic view has proven to be wrong.

The Ottawa Field-Naturalists' Club was involved in the Raccoon Dog controversy right from the outset, and the Club was responsible for getting both the Canadian Nature Federation and

the Federation of Ontario Naturalists involved. It was also responsible for a considerable amount of public pressure created by contacting the media, by alerting politicians such as Conservative environmental critic, Tom MacMillan, and Senator Florence Bird, and by unearthing most of the now-widely-quoted facts about the Raccoon Dog's habits. The initial response to the public pressure was that (i) the Ontario Provincial Government washed its hands of the matter and said it was a federal responsibility despite its previous active encouragement of Supi Farms, (ii) the Federal Government started to draft legislation to control the import of non-indigenous species and banned further import of Raccoon Dogs, and (iii) the Raccoon Dogs stayed where they were. Round one to the Raccoon Dogs.

Round two started when the Canadian Wildlife Federation discovered that Supi Farms, being a foreign company, was required to submit an application to the Foreign Investment Review Agency (FIRA) to continue its Canadian operations. This discovery started a barrage of letters directed at FIRA requesting that the Supi Farms application be refused. The Ottawa Field-Naturalists' Club and several individual members who had read my article contributed heavily to this barrage, as did the Catharine Traill Naturalists, who were also alerted by my article. At about this time, in mid-1981, Kathy Dickson, a graduate student at the University of Guelph, produced a report drawing heavily on OFNC sources which further contributed to public awareness of the problem. Eventually FIRA rejected Supi Farms' application, and there is little doubt that naturalists' lobbying contributed significantly to that decision. A loud cheer went up, only to be stifled when it was learned that Mrs. Haatama had simply sold Supi Farms to herself, and, as a landed immigrant, she did not need FIRA's blessing to operate a business in Canada. Round two to the Raccoon Dogs.

Right from the outset, we urged the federal authorities to buy out Supi Farms and get rid of the Raccoon Dogs. However, the price was just too high to get any fast action along those lines. The initial response was negative, but, as pressure built up, this avenue was investigated by the Canadian Wildlife Service (CWS). The problem was that Supi Farms was negotiating from a position of strength, and with the prospect of having to spend well in excess of \$200,000 to buy it out, it was felt that the Ontario Government should pay half the cost. The province still took the stand that control of imports was a federal matter, and as it turned out, it was not keen on closing down a fur farm operation that provided local jobs. An impasse was reached, and Joe Bryant of the CWS told me that he had done all that could be done and that it was up to us to pressure the politicians to finish the job. Round three to the Raccoon Dogs.

Round four started, for the Club, with several letters sent out in February, 1982, to key members of the three Ontario Provincial parties requesting a change in the provincial stand and

restrictions on transportation and sale of Raccoon Dogs. A letter was also sent to Tom MacMillan asking him to keep the heat on the Federal Government. The response from Premier Davis, dated April 5, 1982, was very interesting in that he indicated that Ontario Government officials were now assisting the Federal Government in its negotiations and that restrictions on transportation and sale of Raccoon Dogs might be counter-productive at that time. On March 9, 1982, we sent letters to the Finnish Ambassador requesting assistance in dealing with Supi Farms (no reply) and to the Hudson's Bay Company asking it to stop trading Raccoon Dog furs. The Hudson's Bay Company responded very quickly. In a letter dated March 26, 1982, it stated that it had removed from its auction house all unsold Raccoon Dog furs and that it would cooperate with the CWS any way that it could to stop the spread of the animal in Canada. It also drew our attention to two fur farm operations in Minnesota and Wisconsin where Raccoon Dogs were present. This firm stand undoubtedly had a very significant effect on negotiations with Supi Farms, and the Hudson's Bay Company deserves to be congratulated for its action.

Coincident with the foregoing, Mrs. Haatama was beginning to be concerned about harassment from the residents of Madoc who were not at all happy about having Raccoon Dogs in their midst. These developments enabled Dr. Nick Novakowski of the CWS finally to negotiate a very satisfactory solution to the problem. On September 29, 1982, Environment Canada announced the settlement. All Raccoon Dogs were to be killed and pelleted by December, 1982. The Hudson's Bay Company would lift temporarily its ban on trading of the furs. The CWS would pay \$115,000 to cover the costs of blue and silver fox breeding stock and the cost of alterations to convert the fur farm to a fox farm. The Ontario Ministry of Agriculture would monitor the operations and ensure that all animals were killed and none escaped. Round four and decisive round to Canada.

On December 22nd, the last of the animals were killed, and there will be no more Raccoon Dogs farmed in Canada. Nick Novakowski told me that Environment Canada is close to wrapping up legislation to control the importation of non-indigenous species into Canada. He also told me that the American Government is controlling the Raccoon Dog farms in Wisconsin and Minnesota under existing legislation, the indigenous species and interstate commerce acts. Attempts are being made to negotiate similar settlements there. Let's hope they are successful.

I want to conclude this article by thanking Joe Bryant and Nick Novakowski for taking the time to discuss Raccoon Dogs with me and to offer congratulations to them and others in the CWS for managing to carry this very important issue to a most satisfactory conclusion.

Letters

On Cutting

Dear Joyce:

As an ardent reader of *Trail & Landscape* I came across the article "Birds and the NCC Cutting Team" in No. 4 last year and recognized immediately my bird problem in the adjacent fields to my residence. Bobolinks, Meadowlarks and Killdeer kept disappearing every year because of too early and repeated cuttings of the fields. I sent a letter to Mr. Hamill of the NCC Conservation Division and got the enclosed* pleasant reply, indicating that the mowing will be stopped completely. This is very good news indeed since we have a good number of birds here on Riverside Drive along the [Rideau] River.

One little detail might interest other birders. I have had a flock of Gray Partridges here every year in varying numbers between six and twelve. These birds are feeding regularly under my bird feeder on dropped grains from the ground as well as out of a flower pot saucer which I stock with pheasant scratch and millet seed. Not too many survive the winter in spite of my care. There is a fox in the area which also has to live apparently. But there is usually just a pair left over to keep on going.

Keep up the good work. I enjoy our little newsletter tremendously.

(signed) Edith Dahlschen

* Mr. Hamill replied that he had inspected the area and agreed that there was no need for the frequency of mowing which was the current practice. He suggested a replacement management program which included eliminating mowing in the fields near the river and planting conifers in the field adjoining the railroad and old Riverside Drive near Ms Dahlschen's home.

Mr. Hammill invited comments on his suggestions and thanked the writer for her interest in and concern for the natural environment.

If any *Trail & Landscape* readers have complaints about or comments on the National Capital Commission's management practices around Ottawa, send them to Stewart E. Hamill, Chief, Conservation, Greenbelt Division, National Capital Commission, 161 Laurier Avenue West, Ottawa, Ontario K1P 6J6, or telephone 992-4828. JMR

On Collecting

Last October a shorebird appeared at Shirleys Bay which no one could identify with certainty. After many attempts to net the bird (and release it after examination) failed, it was shot by personnel from the National Museum of Natural Sciences. This collection aroused the ire of one Club member, and her letter appears below. Following the letter are responses by Roger Taylor, Bruce Di Labio, and lastly, Dan Brunton on behalf of The Ottawa Field-Naturalists' Club.

This exchange is printed, not to generate controversy, but to provide readers with some basis for thinking about the place of collecting in the modern life sciences. JMR

Dear Joyce:

I am sure you are well aware of the Temminck's Stint controversy of a few weeks ago. This controversy was settled when the bird was shot and found to be a Semipalmated Sandpiper, but in its wake another controversy has arisen: the ethics of collecting for mere satisfaction of curiosity. Is it ethical to kill a bird so that listers can add, or not, a name to their list? Is this really what bird watching is all about? Have we degenerated to the point that the name on our lists means more than the bird itself? Seemingly this is so, for while many birders are opposed to collecting per se, collecting for purposes of identification is accepted.

I am opposed to all collecting, but I am adamantly opposed to what I consider to be absolutely senseless collecting. That the Museum, a Government body, should be the prime mover here is appalling. Do we, as taxpayers, want our money to go for such things? I, for one, do not and I am certain that many fellow OFNC members will concur. As I see it this is mere listing on the Museum's part and as such, unworthy of them. I realize of course that the usual arguments in such cases will be trotted out, e.g. important data on range of species, etc. I, however, regard them as mere justification for what is simple satisfaction of curiosity for birders/listers both within and without the Museum. With the proliferation of birders photographing these days most species will be adequately documented this way.

Does the OFNC have a policy on this? Does *Trail & Landscape* wish to comment in print on the situation? Open its pages to debates on the issue? I think you would find that it is a touchy subject for many of the OFNC members, but I am confident that you would find more opposed to collecting than for.

Anyway, thank you for your time,

(signed) Christine Hanrahan

RESPONSES

The questions and controversies surrounding the collection of biological specimens are not new to the pages of *Trail & Landscape*. The Summer Tanager and Red-throated Loon incidents provoked outraged comment as well as editorial comment. (See *Trail & Landscape* 1(4): 82-83 (1967) and 10(1): 22-23 (1976).) Now, Christine Hanrahan has expressed very emphatically her dismay over the collection of an unusually small Semipalmated Sandpiper that had been conjectured to be a Temminck's Stint, a Eurasian species, for which the only North American records are on the Pacific coast.

There are, unfortunately, errors of fact in Christine's letter, so let me deal with those first. I was present at the Shirleys Bay dyke on October 12, 1982, when a team from the National Museum of Natural Sciences, led by Richard Poulin, arrived armed with mist nets for the purpose of catching the bird in question.

At that time there was doubt as to the identity of the bird. Although it appeared to show prominent white outer tail feathers (a diagnostic feature of a Temminck's Stint), on some occasions, when the bird was preening its tail, the white seemed not to be present. There were also other difficulties, so that most people were hesitant to say what they thought it was, although the general belief favoured Temminck's Stint. This prompted Richard Poulin to state that he was not going to be a fence-sitter, and that he believed that it was a Temminck's Stint. He also stated very clearly that if it was a Temminck's Stint, it would *not* be collected.

Later, as he chased the bird around the mudflats and got closer to it than anybody else, he made the startling announcement that the bird *definitely* had no white outer tail feathers. By the time the Museum team had given up its unsuccessful attempt to net the bird, most observers had to admit that the bird might well be an unusual Semipalmated Sandpiper. Had the bird shown the good sense to leave Ottawa at that point, no one who was present that day would have entered Temminck's Stint on his or her lifelist. As we all know, the bird was shot the next day and was confirmed to be a Semipalmated Sandpiper. The point I am trying to make is that the bird was not shot for the benefit of listers. It was collected in the full belief that it was an unusual specimen of a common shorebird.

Turning to the second paragraph of her letter, Christine states "... but I am adamantly opposed to ... absolutely senseless collecting." I could not agree more, and I trust that all OFNC members feel the same. She also states, "I am opposed to all collecting" and here we run into a problem. Why is she opposed to it? Presumably because killing of a biological species, particularly a bird, is abhorrent to her.

Unfortunately man's presence in many areas has a disastrous effect on the well-established predator-prey relationships that are so essential for a stable environment; for example, beaver populations in most cottage areas no longer have wolves to control them. Because of this fact, maintenance of healthy populations by removal of some individuals has become a well-established wildlife management technique. Also, consider the fact that the collection of specimens can be of direct benefit to the species, although, not, of course, to the unfortunate individuals. For example, the study and control of parasites or disease requires specimens of the afflicted plant or animal. Hence to oppose all collecting is not consistent with a genuine concern for a healthy and balanced environment.

The concerned naturalist should be prepared to accept some collecting provided that it is done in a responsible fashion. Most of us would prefer not to participate in the process, although there seems to be much less reluctance to uprooting plants or swatting mosquitoes than to gunning down birds or mammals. So the question that remains in the "Temminck's Stint" incident is that of whether the Museum acted responsibly.

As I pointed out at the outset, the objective was not to collect a rare species but to add an unusual specimen to an existing collection, thereby, it was hoped, adding to our knowledge about Semipalmated Sandpipers. Was it worth a life to add that knowledge? That is a judgement call; many would say yes, others no. Would a photograph have been sufficient? To the best of my knowledge, no good photographs were obtained and certainly none that was diagnostic. In my opinion it is wrong to castigate the Museum for collecting that bird. All naturalists derive a great deal of benefit, either directly or indirectly, from biological collections. Surely it is the responsibility of curators to improve the scope of their collections, if that can be done without endangering a species or disturbing the environment.

It has sometimes been argued that most collections are sufficiently large and the knowledge sufficiently extensive that no further specimens are needed. That is a very dangerous argument. In the late nineteenth century it was generally believed that virtually everything possible was known about the science of physics and only a few loose ends needed to be tied up. One of those loose ends, the black body radiation law, led to the development of quantum theory and spawned nearly all of modern physics that we know today. Within reason, a good scientist has to pursue the unknown.

I want to conclude these comments by making it clear that I am not in favour of indiscriminate collecting. I favour a careful policy of responsible collecting, a position I feel that nearly all naturalists would agree with. The problem is that there is always a gray area between irresponsible and responsible

collecting and that is where there will always be controversy. In this particular incident, I believe that the Museum personnel behaved responsibly and that we can count on them to continue to do so in the future.

Roger Taylor

Over fifty highly skilled amateurs and several professionals were unable, after hundreds of person-hours of observation and debate, to reach a conclusion as to the sandpiper's identity. Later all of the photographs taken proved useless. Stint/sandpiper identification is a fine art that is still in its infancy. The Semipalmated Sandpiper killed in Ottawa was a perfect opportunity to compare a specimen to copious field notes, their interpretation, and photographs. It was a perfect way to evaluate and refine field identification criteria with a known entity. The inescapable conclusion from this incident is that the field identification of a very common bird, Semipalmated Sandpiper, has not been "adequately documented".

Is the identification of a bird so important that collecting is justified? Yes (!) if you use a field guide. Yes (!) if you expect that field guide to be accurate and up to date. All field guides are based either on specimens directly or on papers using specimens in one way or another. Field identification is a dynamic, ongoing branch of avian research. It is necessary to base conclusions on fact, not speculation. Thus the continued need to collect specific, so-called "rarities".

Where would modern science be if it were not for man's insatiable thirst for truth? One can empathize, but does this put facts into our journals?

Bruce M. Di Labio

The Ottawa Field-Naturalists' Club supports scientifically-sound and responsible collecting of floral and faunal specimens. We do so in recognition that detailed knowledge of plants and animals cannot be gathered without original material to work from. We recognize this as part of the procedure necessary to further knowledge and appreciation of the natural sciences in Canada, a concept we have been committed to for over a century. The Ottawa Field-Naturalists' Club has opposed inappropriate collecting in the past and would not hesitate to do so again if necessary. The sandpiper incident, however, involves a scientifically sound and responsible collection, and we, therefore, do not oppose it. This issue has been discussed at a recent Council meeting, and I have sent detailed letters of explanation to Mrs. Hanrahan and to the Ornithology Section of the National Museum of Natural Sciences.

D.F. Brunton
President

Gray Kingbird

Second Confirmed Record for Canada

Bruce M. Di Labio and Richard Blacquiere

On October 31, 1982, at approximately 11:30 a.m., an unusual flycatcher (Tyrannidae) was observed near the Britannia Filtration Plant in Ottawa by John Woolley and Edward LeBlanc, who tentatively identified the bird as a Gray Kingbird (*Tyrannus dominicensis*). They contacted one of us (BMD), who observed the flycatcher a short time later and confirmed the identification.

The bird was under nearly constant observation from 11:30 a.m. until 4:10 p.m., except for two periods of approximately 20 and 30 minutes when the bird flew out of sight. The kingbird was seen by about 30 local birders, who viewed it under good conditions of an overcast, but bright, sky and low wind. The following field marks were noted: a relatively long and heavy black bill, a notched tail, a dark face mask, and a plain grayish back, underparts and tail. Several photographs were taken by Paul Davidson, and the identification was confirmed subsequently from a colour transparency by Dr. W.E. Godfrey of the National Museum of Natural Sciences. A copy of the photographs has been deposited in the Museum collection.

During the time the kingbird was under observation, it was very active but stayed in the immediate vicinity of the Filtration Plant. Most frequently it perched in ornamental crab apple trees on the plant grounds or in nearby deciduous trees near the Ottawa River. It was observed to catch and eat 6-8 large dragonflies (Odonata) and also ate at least two types of berries, Climbing Nightshade (*Solanum dulcamara*) (pers. comm. Ron Pittaway) and Common Buckthorn (*Rhamnus cathartica*).

The only previous Canadian record of Gray Kingbird substantiated by a specimen or photograph was a specimen taken on September 29, 1889, at Cape Beale, Vancouver Island, B.C. (Godfrey 1966). Five other Canadian sight records exist. In Nova Scotia there are two records: Sable Island, October 20-23, 1973 (McLaren 1981a), and Bon Portage Island, no date available (McLaren 1981b). There is a single record from New Brunswick: Rothesay, September 26, 1965 (Bagg 1966). There are two records for Ontario: Kingston, October 29, 1970 (Hughes 1971), and Point Pelee, May 25, 1974 (Goodwin 1975).

The Gray Kingbird is a bird of the tropics and sub-tropics; normally it is found breeding no farther north than coastal southeastern United States (Godfrey 1966, Bull 1974). There may be a post-breeding dispersion which carries some individuals



Map of Canada showing localities mentioned in the text:

1. Ottawa, Ont.;
2. Cape Beale, B.C.;
3. Sable Island, N.S.;
4. Bon Portage Island, N.S.;
5. Rothesay, N.B.;
6. Point Pelee, Ont.
7. Kingston, Ont.;
- and 8. Point Pelee, Ont.

as far north as Canada; six of the seven Canadian records were in the fall. Weather may also play an important role; weather summaries indicate a northward flow of warm, moist air into eastern Canada during the last week of October 1982. That may be significant in light of two other Ontario reports of unusual tyrannids, an Ash-throated Flycatcher (*Myiarchus cinerascens*) near Toronto, and a Scissor-tailed Flycatcher (*Tyrannus forficatus*) at Deep River, the same weekend the Gray Kingbird was sighted in Ottawa.

Acknowledgements: We would like to thank Dr. W.E. Godfrey for critically reviewing the manuscript, and Louise Damant for typing the manuscript.

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Recent Bird Sightings

Bruce M. Di Labio
Val Bernard Ladouceur



The months of November and December featured above-normal temperatures and a lack of snow. Consequently, the river stayed open, and ducks and gulls lingered later than usual.

A high of 16 Common Loons was observed on November 7 at Constance Bay; a single Common Loon stayed into early December. A Red-throated Loon was observed periodically during November between Ottawa Beach and Britannia Pier. Horned Grebes, again, were recorded in lower numbers than was the case a few years ago; a Pied-billed Grebe was still present in early January near Lemieux Island.

Two late Double-crested Cormorants were observed on November 13 at Shirleys Bay. Great Blue Herons were sighted into late December.

Late records for waterfowl included Snow Goose (blue phase) on November 6 at Ottawa Beach, Green-winged Teal on December 9, Blue-winged Teal on December 11, Shoveler on December 5, and Wood Duck on December 15, all at Shirleys Bay. A flock of 62 Oldsquaw was observed December 2, also at Shirleys Bay. The now annual female Barrow's Goldeneye at Parc Brébeuf was present throughout the period. The rare King Eider appeared at Shirleys Bay on November 25. This is the fourth consecutive autumn that this species has been sighted on the Ottawa River. Shirleys Bay was also the location of a late Ruddy Duck on November 16.

On November 16 an immature Bald Eagle flushed 6500 ducks at Shirleys Bay. The eagle didn't go after the ducks but instead caught a fish and leisurely ate it in a large, dead elm near the parking lot at the bay. For the fourth consecutive late autumn/winter, at least one Gyrfalcon was observed in areas south and west of the city.

Our "pet" Sandhill Crane, here since late April, was still present into the new year between North Gower and Malakoff along the Smiths Falls Road.

An extremely late American Woodcock was seen on November 30 at Shirleys Bay (where else?).

On November 5, one rare Purple Sandpiper obliged Ottawa birders by feeding at Britannia Beach all day.

Record high counts were reported for Glaucous Gull (70), Iceland Gull (60), and Great Black-backed Gull (120) in late December. A small number (up to 4) Thayer's Gulls was recorded throughout November and December. Two adult Lesser Black-backed Gulls were observed on November 11 at Nepean Dump. The latest Tern record for Ottawa was a Forster's Tern on November 7. It was the fifth or sixth Forster's Tern sighted in Ottawa this year, an amazing number considering that only 4 had been recorded before 1982.

A Red-bellied Woodpecker, a rare winter visitor, was noted in the Alta Vista area on November 10. A good movement of Black-backed Three-toed Woodpeckers occurred in late autumn.

Two Gray Jays frequented the Pink Road Feeder from mid-December until the end of the period. Two Northern Mockingbirds appeared to be overwintering in Clyde Woods in December. One of the latest, if not the latest, records of Swainson's Thrush was observed on December 12 near Gatineau. Due to mild conditions several Yellow-rumped Warblers stayed on into late December; Ottawa's first wintering Pine Warbler endured until January 10 when it succumbed to the weather.

Northern Cardinals continue to thrive in the Ottawa Valley. (See *Christmas Bird Count Roundup* for Cardinal numbers as well as information concerning which winter finches were present during this time period.)

For a more detailed assessment of birds in the Ottawa District, why not subscribe to *The Shrike*. Subscription rate is \$4.00 for six issues. Phone Bruce Di Labio at 729-6267 or write to him at 62 Grange Avenue, Ottawa, Ontario K1Y 0N9, if you have any questions about the publication.

An Albino Spotted Sandpiper

On July 17, 1982, while conducting a shorebird survey for the Canadian Wildlife Service at the mouth of Watts Creek, Shireleys Bay, I observed a medium-size, very pale shorebird. The back and wings were a uniform creamy-brown. The neck, breast and undertail coverts were white. The bill was pink-orange, thin and noticeably longer than the head. The legs were pink-orange. No other outstanding features were noted.

This shorebird was associated with Spotted Sandpipers, with which I could compare it directly. Feeding habits and behaviour led me to conclude that this was an albino Spotted Sandpiper.

The bird was present until August 2nd. Photographs were taken by Fran Goodspeed and are on file with the National Museum of Natural Sciences. *Bruce M. Di Labio*

Second Annual Christmas Bird Count Roundup 1982-1983 period

Astrid and Bruce Di Labio

Thank you to all participants and compilers for making this year's Christmas Bird Counts a great success once again. The combined total of species for all area counts was 76, down from last year's total of 81 species. This year, individual totals were also down; last year 46,606 birds were recorded, compared to this year's 41,675.

The Ottawa-Hull Count took place on December 19, 1982, with 154 participants; it was compiled by Bernie Ladouceur. Highlights included Pied-billed Grebe, and nine species of waterfowl. Also, a Pine Warbler was seen on the Carleton University campus; this record became the 131st species to be observed on the Ottawa-Hull Count.

The Pakenham-Arnsprior Count was held on December 26; it was compiled by Mike Runtz and had 35 observers. Some of the highlights among the 44 species recorded were Ring-necked Duck, Belted Kingfisher and Screech Owl.

The Carleton Place Count, compiled by Arnie Simpson, took place on December 27. A total of 44 species was recorded by 84 observers. Forty-seven of these observers were feeder watchers! Highlights included two Saw-whet Owls, Belted Kingfisher, White-crowned Sparrow and Yellow-rumped Warbler. The warbler was new for the count, bringing the all-time total to 89 species.

The Dunrobin-Breckenridge Count, on January 2, was compiled by Bruce Di Labio and had 52 observers. Fifty species were recorded on this count; highlights included 13 new species, bringing the total up to 65 species in two years.

Thanks again, and hope to see you all next season.

The following table contains the results of the four local Christmas Bird Counts. In the table these two notations are used:

* record high numbers

** new species for the count (will therefore also indicate record high number for that species).

1982-1983 CHRISTMAS BIRD COUNT ROUNDUP

Species	Ottawa Hull	Dunrobin Breckenridge	Pakenham Arnprior	Carleton Place
Pied-billed Grebe	1	-	-	-
Canada Goose	1	62**	-	-
Mallard	67	2	-	3
American Black Duck	324	11	1	-
Ring-necked Duck	2	-	1	-
Common Goldeneye	285	2**	-	3
Barrow's Goldeneye	1	-	-	-
Hooded Merganser	4	-	-	-
Common Merganser	41	-	4	16
Red-breasted Merganser	1	-	-	-
Northern Goshawk	2	4	1	1
Sharp-shinned Hawk	-	1	2*	-
Cooper's Hawk	1	-	-	-
Red-tailed Hawk	1	2	1	3
Rough-legged Hawk	1	5	1	3*
Bald Eagle	-	1**	-	-
American Kestrel	11	13*	9*	1
Ruffed Grouse	48	39*	30	19
Ring-necked Pheasant	1	-	-	-
Gray Partridge	166	-	-	-
Glaucous Gull	35*	-	-	-
Iceland Gull	13*	-	-	-
Great Black-backed Gull	34	-	-	-
Herring Gull	625	1**	-	-
Rock Dove	5479	749*	368	1092*
Mourning Dove	18	10	22	9
Screech Owl	1	-	1	1
Great Horned Owl	10	18*	4	7
Snowy Owl	-	2*	1	-
Barred Owl	1	-	-	-
Long-eared Owl	-	1	-	-
Saw-whet Owl	1	1**	-	2*
Belted Kingfisher	-	-	1	1
Common Flicker	-	1	-	-
Pileated Woodpecker	13*	10*	3	4
Hairy Woodpecker	102	123*	37	100*
Downy Woodpecker	137	77*	51*	101
Black-backed 3-toed Woodpecker	17	4*	2	1
Northern 3-toed Woodpecker	7	4**	1	-
Horned Lark	10	-	5	-
Gray Jay	1	1**	2	-
Blue Jay	455	303*	165	330
Northern Raven	11	24*	4	-
American Crow	760	119*	99*	90*
Black-capped Chickadee	2660*	1859*	763*	816*
White-breasted Nuthatch	205	147*	92*	139*
Red-breasted Nuthatch	25	63*	57	4
Brown Creeper	23	38*	22*	8
Northern Mockingbird	1	-	-	-
American Robin	10	3**	-	2
Golden-crowned Kinglet	47*	71*	67*	15
Ruby-crowned Kinglet	5*	-	-	-
Cedar Waxwing	5	-	-	21
Northern Shrike	12	11*	3	3
European Starling	6170*	236*	369	326*

1982-1983 CHRISTMAS BIRD COUNT ROUNDUP, continued

Species	Ottawa Hull	Dunrobin Breckenridge	Pakenham Arnprior	Carleton Place
Yellow-rumped Warbler	5	1**	-	1**
Pine Warbler	1**	-	-	-
House Sparrow	3158	1104*	977	862
Red-winged Blackbird	4	1**	-	-
Rusty Blackbird	1	-	-	1
Common Grackle	1	-	-	2
Brown-headed Cowbird	-	-	-	1
Northern Cardinal	35	2*	1	1
Evening Grosbeak	188	963*	733	1455
Purple Finch	227	149**	35	26
Common Redpoll	3	-	-	7
Pine Siskin	6	-	5	-
American Goldfinch	255	105*	44	41
White-winged Crossbill	11	3	4	-
Dark-eyed Junco	35	26*	1	-
Tree Sparrow	216	316*	45	19
White-crowned Sparrow	3	-	-	1
White-throated Sparrow	7	1**	1	2
Song Sparrow	6	2**	1	1
Lapland Longspur	-	1	-	-
Snow Bunting	458	3161*	81	5
Total Individuals	22,467	10,042	4,120	5,046
Total Species	68	50	44	44
Total Individuals (all counts)	41,675		Total Species (all counts)	76

Colour-marked Common Terns

The Canadian Wildlife Service, Ontario Region, is continuing its program of colour-marking Common Terns at two colonies in the lower Great Lakes to determine their post-breeding dispersal, migration routes and winter range.

In 1981, adults were marked with orange wing-tags and chicks with pink tags. Many of the adult tagged birds returned to their colonies in 1982 still carrying their tags. The tagged birds appeared fit and nested normally. Most tags were still clearly legible and showed little wear.

In 1982, bright blue wing tags (with black lettering) were put on adult Common Terns and black tags (with yellow lettering) on chicks just prior to fledging. Tags were put on both wings of all birds. All tags were combinations of letters and numbers. (The two tags on any bird have the same combination.)

When you observe a tagged tern, would you please report the date, location, colour of the tag, and, if possible, the number/letter combination to BANDING OFFICE, CANADIAN WILDLIFE SERVICE, HEADQUARTERS, OTTAWA, ONTARIO K1A 0E7. All reports will be acknowledged.

Species List for Ottawa-Hull Christmas Bird Counts (1919-1982)

The following list is a summary of the 131 individual species recorded in the history of the Ottawa-Hull Christmas Bird Count. Record highs and the year(s) of these highs are given. When the record high has been achieved in more than three years, the number of years is stated rather than the individual years. This list was prepared by Bruce Di Labio from the records of the Christmas Bird Counts.

Species	Record High	Year Record	First Record	Species	Record High	Year Record	First Record
Common Loon	1	62,67	1962	Downy Woodpecker	211	1980	1921
Red-throated Loon	1	1970	1970	Red-headed Woodpecker	2	1979	1979
Red-necked Grebe	2	1968	1949	Black-backed 3-toed W.	20	1980	1927
Horned Grebe	2	1973	1973	Northern 3-toed W.	29	1976	1941
Pied-billed Grebe	1	68,72,82	1968	Eastern Phoebe	1	1969	1969
Great Blue Heron	2	1965	1952	Horned Lark	167	1960	1948
Canada Goose	135	1981	1957	Gray Jay	19	1972	1921
Mallard	76	1977	1931	Blue Jay	481	1976	1921
American Black Duck	656	1979	1941	Northern Raven	24	1980	1971
Green-winged Teal	1	1979	1979	American Crow	1514	1980	1921
Common Pintail	2	1975	1975	Black-capped Chickadee	2660	1982	1919
Wood Duck	3	1979	1971	Boreal Chickadee	24	1972	1927
Ring-necked Duck	9	1966	1952	Tufted Titmouse	1	1979	1979
Canvasback	1	68,73	1968	White-breasted Nuthatch	263	1980	1921
Greater Scaup	4	1979	1952	Red-breasted Nuthatch	388	1976	1920
Lesser Scaup	1	7 yrs.	1969	Brown Creeper	51	1979	1920
Common Goldeneye	483	1963	1924	Winter Wren	2	1974	1950
Barrow's Goldeneye	2	61,78,79	1960	Carolina Wren	2	1980	1971
Bufflehead	4	1971	1953	Northern Mockingbird	4	73,79	1964
Harlequin Duck	1	1971	1971	Brown Thrasher	4	4 yrs.	1968
Oldsquaw	6	1969	1956	American Robin	34	1972	1921
White-winged Scoter	1	4 yrs.	1970	Varied Thrush	1	1979	1979
Hooded Merganser	4	67,70,82	1937	Hermit Thrush	1	60,71	1960
Common Merganser	79	1952	1926	Golden-crowned Kinglet	47	1982	1927
Red-breasted Merganser	13	1949	1948	Ruby-crowned Kinglet	4	1982	1949
Northern Goshawk	8	1973	1924	Water Pipit	1	1954	1954
Sharp-shinned Hawk	2	7 yrs.	1921	Bohemian Waxwing	1060	1980	1930
Cooper's Hawk	5	1970	1960	Cedar Waxwing	168	1978	1932
Red-tailed Hawk	9	1973	1960	Northern Shrike	24	1977	1921
Red-shouldered Hawk	1	48,55	1948	Loggerhead Shrike	1	1962	1962
Rough-legged Hawk	28	1973	1956	European Starling	6170	1982	1924
Bald Eagle	1	72,73,78	1972	Yellow-rumped Warbler	7	1979	1967
Gyrfalcon	3	1980	1972	Pine Warbler	1	1982	1982
Peregrine Falcon	1	72,75	1972	Common Yellowthroat	1	1979	1979
Merlin	2	39,59	1931	House Sparrow	6655	1968	1927
American Kestrel	18	1974	1940	Eastern Meadowlark	2	1980	1931
Spruce Grouse	2	1944	1944	Red-winged Blackbird	15	1972	1928
Ruffed Grouse	93	1979	1919	Northern Oriole	1	1978	1978
Ring-necked Pheasant	56	1944	1932	Rusty Blackbird	7	1977	1964
Gray Partridge	675	1980	1948	Common Grackle	12	72,73	1930
American Coot	1	1969	1969	Brown-headed Cowbird	29	1980	1960
Common Snipe	1	70,78	1970	Northern Cardinal	57	1981	1945
Glaucous Gull	35	1982	1943	Rose-breasted Grosbeak	1	1968	1968
Iceland Gull	13	1982	1956	Evening Grosbeak	2621	1972	1923
Great Black-backed Gull	54	1979	1957	House Finch	1	1980	1980
Lesser Black-backed Gull	1	1979	1979	Purple Finch	519	1976	1920
Herring Gull	1025	1979	1923	Pine Grosbeak	1080	1977	1919
Thayer's Gull	1	73,79,81	1973	Hoary Redpoll	15	1952	1952
Ring-billed Gull	7	1979	1957	Common Redpoll	3264	1981	1919
Black-legged Kittiwake	1	1981	1981	Pine Siskin	894	1922	1919
Thick-billed Murre	1	1952	1952	American Goldfinch	1236	1974	1923
Rock Dove	7369	1980	1932	Red Crossbill	108	1976	1950
Mourning Dove	54	1979	1952	White-winged Crossbill	105	1981	1927
Screech Owl	2	4 yrs.	1923	Rufous-sided Towhee	1	5 yrs.	1969
Great Horned Owl	47	1971	1979	Savannah Sparrow	1	1966	1966
Snowy Owl	10	1967	1954	Dark-eyed Junco	36	1981	1932
Hawk Owl	2	1965	1922	Tree Sparrow	318	1971	1920
Barred Owl	6	1977	1933	Chipping Sparrow	1	69,81	1969
Long-eared Owl	1	5 yrs.	1973	Field Sparrow	2	1971	1965
Short-eared Owl	9	1962	1957	White-crowned Sparrow	4	1970	1948
Boreal Owl	1	73,76	1973	White-throated Sparrow	16	1976	1922
Saw-whet Owl	1	6 yrs.	1971	Swamp Sparrow	6	1977	1968
Belted Kingfisher	2	64,73,74	1964	Song Sparrow	25	1979	1924
Common Flicker	2	1970	1958	Lapland Longspur	30	1961	1937
?ileated Woodpecker	13	1982	1926	Snow Bunting	1876	1975	1921
Hairy Woodpecker	224	1975	1921				

Macoun What's What

news from the junior club

Diana Halhed

Throughout the last five months the Macoun Field Club has had many first-class speeches, slide shows and field trips. We began September with a talk on the herbarium and plant classification, followed by an enlightening field trip on how to collect and preserve plants. The next week George White gave us a good talk on fungi, followed by another field trip.

During October we had an excellent slide presentation and talk on the Sierra Mountains by Derek Munro. Next we had a very enjoyable field trip to Innis Point, where Janette Dean showed us around the banding station. We also had a field trip and talk on lichens by Sharon Gowan.

In November we had many exciting events. First, Andrew McFarlane gave us a talk on his summer up North. Then, on the weekend of November 12-14, the senior branch of the Macoun Field Club had a fall camping trip to Sand Lake, a fairly small lake located about 50 km from Kingston near the town of Elgin. The property we stayed on was owned by a member's family, who kindly let us use their cottage. The first evening was spent settling into our tents, which had been set up the previous day by two members. The camp site was set up near the Lake and was sheltered by a massive boulder.

On Saturday we went canoeing to an island where some of us studied ferns, including Lady Fern (*Athyrium felix-femina*), Common Polypody (*Polypodium vulgare*), and Ebony Spleenwort (*Asplenium platyneuron*). We spent the afternoon doing a tree study of the area and came up with more than two dozen trees and shrubs. That night was spent mainly star-gazing and owling; we saw lots of stars, but did not even hear an owl. The bird and animal list for the trip included Common Loon, Pileated Woodpecker and Snowshoe Hare.

Shortly after the trip, we had a fascinating tour of the Taxidermy Section of the National Museum of Natural Sciences.

In December Clifford Crompton told us about pollen using many good slides, and we discussed allergies. The next week we had an open meeting followed by a talk by Michael Manga on his trip to Africa.

We started off the new year in style with a talk and slide show presented on the Galapagos Islands by Gordon Hamre. We have many things to look forward to in the coming months.

The Miracle

Distracted by the steaming kettle
and the smell of crisping toast,
I almost miss the miracle.

It begins with quiet movements
beyond the sunlit kitchen window,
out of reach in patterned shadows,
under the spring-green cedar hedge.

With head crest erect, a crimson male
darts among the lowered branches,
reappears in spidery undergrowth.

Alert, wary, he is cursed
with vivid beauty; a conspicuous prey.

His mate is olive-toned composure,
serenity, searching for food
between seed husks, exploring the lawn
with her sharp pink bill.

The world contracts to the smell
of warm spring, the boiling kettle
and the cardinals, promise-filled.

On impulse the birds fly up
and through the open network
of budding maple trees.

Miracle ended, I butter the toast.

Linda Jeays

Junipers, (Onions), Robins and Waxwings

Sheila C. Thomson

On top of Mount St. Patrick in Renfrew County, juniper bushes march over the clearings, acre after acre, rendering the open country impassable to hikers. You can't walk through them. (Too prickly!) You can't cut them down. (No trunks!) You can't even dig them up. (Most are rooted inextricably in the crevices of bedrock and boulder piles.)

The frosty blue juniper berries are faintly sweet when fresh, but a lingering flavour of turpentine discourages even experimental nibbling. Besides, Martha Webber, of wild foods fame, cautions that there are "dangerous aspects of juniper use". Viewing bumper crops of juniper berries, we lament that they are useless for jellies and jams. Apart from the obvious function of producing more and more juniper bushes, what use are they?

First, we are told - and we can believe it - that chewing on a juniper berry is an effective and inexpensive method of removing all trace of onion from the breath! We concede that this could be useful on occasion.

The second use we discovered one spring weekend, when a severe ice and sleet storm had sealed the earth after the first wave of robins had already arrived back from the south. A silent white world greeted us on the mountain. Many birds had died, but not all. Movement under a juniper bush revealed a robin, still alive after several days without earthworms or insects. We watched him deftly picking off and eating last year's juniper berries from the drooping branches. The wizen blue beads, flavoured of turpentine, nevertheless provided a lifeline, survival rations, for this year's returning robins.

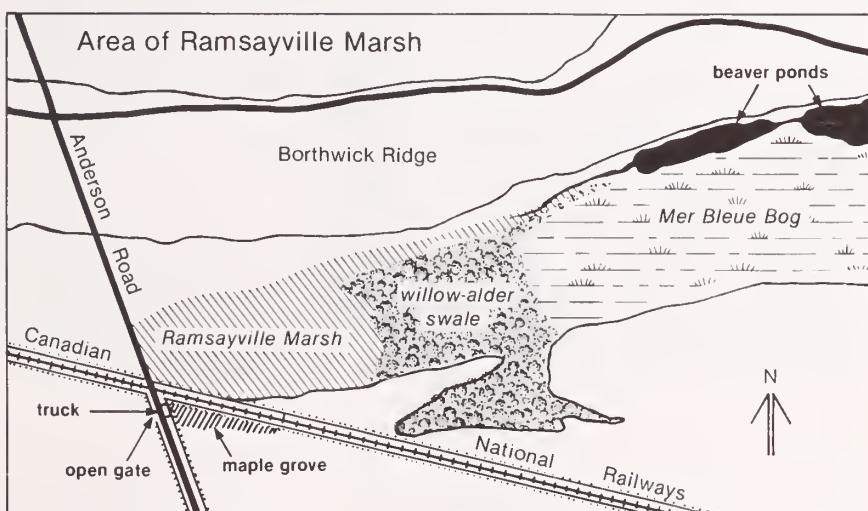
Less utilitarian, infinitely more delightful, was our next discovery. One summer day we surprised a pair of cedar waxwings, solemnly playing with a juniper berry. The pair sat side by side on the branch of an oak tree, daintily passing the juniper berry back and forth between them, from beak to beak, an amusing and altogether delightful scene. A toy? A token? Whatever the significance of this ritual, it served, along with the robin incident, to sweeten our somewhat sour opinion of junipers.

Glimpses into the Life of a Fox Family

Teresa Aniškowicz

Last spring, while I studied Soras and Virginia Rails in Ramsayville Marsh, I saw many fascinating things. I am one of those people who is too curious to be able to concentrate only on my main purpose and ignore everything else. At times this curiosity has gotten me into trouble, but it has also lead me to witness many wonderful happenings. I will tell you about the marsh in another article, but here I would like to relate an experience that started on the very first day of my study. It was one of those bonuses that occasionally happens by when one spends a lot of time outdoors.

It was May twenty-first. I stopped my vehicle on the east shoulder of Anderson Road, about 30 metres south of the railway track which runs east-west along the edge of Ramsayville Marsh. It was 11:30 a.m. - it was late. Getting organized and gathering everything I would need during the next three weeks had taken up most of the morning. I was eager to get going, but as I reached for my waders and shoulder bag, I glimpsed a motion out of the corner of my eye. I turned to have a better look, fully expecting to see a groundhog, as they were plentiful in that area. Instead, I was astonished to see a fox trotting directly towards me carrying something dark in its mouth - that something was a fair-sized pup held by the scruff of its neck.



The vixen had come along a track in the field to the west of the road. At the gate she paused, put the pup down to get a better grip, then continued, trotting across Anderson Road. As I watched her, I grabbed for the camera and fumbled to get the telephoto on. By the time I had done that, she had crossed the road, passed behind my truck, and after some difficulty in getting through the fence, she was trotting eastward through tall grass beneath widely-spaced, mature maples. She paused frequently to get a better grip on the pup, which seemed constantly to be slipping out of her jaws, although it hung limply without squirming or protesting in any way. Soon she disappeared from view; only the shrill cries of frightened groundhogs marked her progress.

Back in the truck, my thoughts raced as I considered the possibilities and implications of what I had just seen. The vixen was moving her family to a new den. If she had pups left in her old den, she would be back for them. Maybe she would use the same route. In any case, she would have to cross the road where I was bound to see her. How long would I have to wait? But maybe this was the last of her pups. In that case I could waste a lot of time here. Maybe I should go to the marsh, for, after all, that's why I was here in the first place. I decided on a compromise. Although it was not yet noon, I would have lunch as I waited; that would save time later.

As I ate, I watched a groundhog sunning itself on a mound of earth beside its burrow. I kept looking around, checking for the vixen. I finished lunch in about 10 minutes. Should I wait longer? I did. A while later I glimpsed movement at the edge of the maple grove some distance to the south. It was the vixen. Twenty minutes had passed since I saw her heading east. Now she was going west at a trot. She crossed Anderson Road, turned and headed north along the shoulder. I grabbed my camera and watched as she approached. Just as she came to the gate and turned into the field, I released the shutter. She seemed not to have noticed the noise or chose to ignore it, intent on her own affairs. She trotted along the track in the field and disappeared behind the tall grass where the track took a turn. Again I could follow her progress by the calls of alarmed groundhogs. Now I was certain she would return with another pup.

I did not have to wait long. I spotted her in the exact same spot where she had disappeared only 10 minutes earlier. She came directly towards me carrying another pup. She proceeded through the gate, paused ever so slightly as a car zoomed by, crossed the road and passed directly behind my truck, slipped under the fence and continued east through the maple grove using the same path as before. The groundhog I had been watching earlier noticed her when she was only several metres away. It became alarmed, but soon relaxed as if realizing that the vixen was too preoccupied to bother with hunting. The pup she now carried seemed lighter, easier to handle than the first one; only once did she pause to adjust her grip. When she disappear-

ed, I ran down Anderson Road to where the railway track crossed the road. For over 10 minutes I looked east down the track but she did not cross it. Her new den would have to be somewhere to the south of it.

About 20 minutes after the vixen had crossed the road going east, I again spotted her on her way west. She came towards my truck, went behind it, crossed the road between rather widely-spaced cars, trotted through the gate and eventually disappeared without a pause in her gait. Again, 10 minutes later, she reappeared carrying a third pup. But she had to pause frequently with this one; it must have been very heavy. She seemed oblivious to the traffic on Anderson Road; again she crossed the road just after a car passed by and tried going through the fence on the other side. She had her problems as the pup was too big. She put it down, got through herself, then turned and pulled the pup. Its tiny white-tipped tail was the last through the fence. She picked the pup up and went east through the maple grove, almost bumping into a groundhog but not paying any attention to it. The groundhog, on the other hand, was startled and ducked into its burrow with a shriek. The vixen ignored it completely, all her attention on getting her cumbersome pup into the new den.

After she disappeared, I waited for over half an hour, then picked up my gear and headed east along the railway track. I paced myself at about the speed of the trotting vixen and walked



This pup was quite big. This was probably the last time its mother attempted to carry it, using a firm yet gentle grip on its neck.

photos from slides by the author

for almost ten minutes. At this point, the maple grove tapered off and gave way to a field. Somewhere near this end of the grove was the new den. Maybe I would have time to investigate on another occasion, but now I continued a few metres to the east, then turned north, crossed a fence and headed towards the marsh.

Next morning as I drove up to my parking spot, I saw a fox crossing Anderson Road going east, carrying a young dead groundhog. It was either the vixen or her mate taking food to the pups. That evening, on my way out of the marsh, I was carrying quite a few things. I came to the fence by the railway track, heaved my paraphernalia over the fence and down the south side of it, crossed over and then stooped down to pick everything up. I looked up and there, outlined against the sky, I saw the vixen watching me from the railway track.

She was motionless, but near her there was movement in the grass. I put all but my camera back down and stood up slowly. Near her were three pups. One was black, another was light red like its mother, and the third was mostly dark with some lighter areas. They were trying to suckle her. At first she seemingly ignored them, looking at me, but then she tried to nudge them away, to no avail. As she walked a little piece, they followed and began suckling again when she paused. She growled a little and nipped one's neck. Still the pups would not desist.

Suddenly she freed herself and ran towards the den where a fourth pup sat in the tall grass looking around. She picked up a dead groundhog and carried it to the three pups on the railway track. She showed it to them, then trotted towards the den carrying the groundhog, the three pups following close behind. Near the den they started to play with each other and with the dead groundhog. She gave a sharp, short bark as she stood near the entrance, pointing her nose into the hole. The pups were not quick to respond. They ignored my presence, even though by then I was standing in full view on the railway tracks. They didn't consider me dangerous. As they came up to the vixen, she kept pointing to the den entrance and gave a few more short barks. Two of the pups went in. A third stood nearby. Again she gave a short bark, then growled and nipped it in the neck. Finally the pup went in, but its head still showed in the entrance. The fourth pup had disappeared in the grass. The vixen then moved off to the east.

Soon she appeared on the railway track some 15 metres from where I stood. She kept watching me, yawned and sat down but constantly kept an eye on me. Meanwhile, all four pups started a rough and tumble near the den. I watched for a few minutes, then, not to disturb the vixen any longer, I went back to the fence, picked up my gear and started on my usual route back to the truck. Several metres to the west I noticed two more pups playing in some raspberry canes under a birch tree. Nearby was another burrow entrance into which they disappeared periodically,

then came out again. Both these den entrances had been abandoned groundhog burrows. Had the vixen dug a connection between them? The two pups played and tumbled, glancing at me now and then. I watched them for a short time, then turned and saw that the vixen was still eyeing me, so I continued on my way.

On several succeeding evenings I saw the pups near one or other den entrance. I always stayed on my regular route, never approaching either den entrance for fear that the vixen might move her family once again. With each day the pups became more shy and wary until I saw them no more. However, the grass around the den remained trampled, indicating that they still used it. Several times I saw an adult fox carrying dead ground-hogs, usually quite young ones, across Anderson Road in the direction of the den.

During my daily comings and goings I kept seeing a Black-capped Chickadee that frequently flew towards some old Pin Cherry trees near the second fox den entrance. Towards the end of my study, after not having seen the foxes for some time, I went to investigate. Sure enough, in the trunk of a dead Pin Cherry was a hole where the chickadees nested. All around the trees the grass was trampled down, the ground was riddled with holes, and the remains of groundhogs were scattered about. This was the playground of the fox family, screened from view from the railway track by a raspberry thicket.



The vixen stood near her new den in the sandy bank. Despite her warning growls, one of the six pups remained visible in the entrance.

St. Lawrence Birding Trip

Bruce M. Di Labio

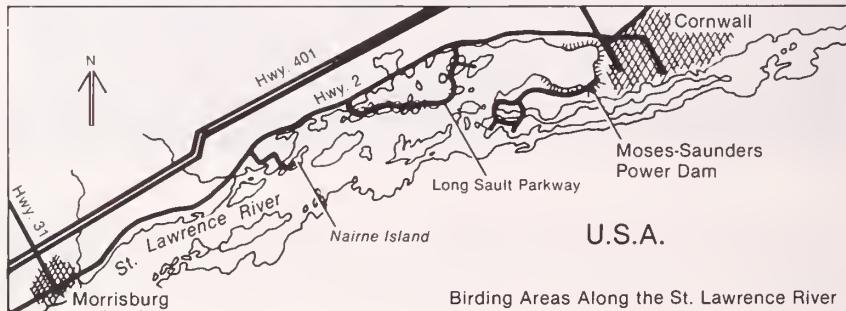
On the bright and sunny morning of November 14th, the National Museum's Dinobus was set for another tour. Thirty-six people and leader Bruce Di Labio set off at 7:30 a.m. for an enjoyable day of birding along the St. Lawrence River.

The first stop was, in George McGee's words, for a "cup of coffee". (Just joking, George!) After a twenty-minute stop, we continued on to the Upper Canada Wildfowl Sanctuary on Nairne Island east of Morrisburg. Upon arriving, we walked over to the viewing area to see if there were any geese; however, since the feeding doesn't start until 2:30 p.m., there was just a small number of Canada Geese. In the ponds there were a few Gadwalls and American Widgeons. The next area we checked was around the campsites on the connecting island. There we found a flock of 18 Snow Buntings, some of which were sitting in trees, allowing everyone to get an excellent view. Along the river area, large flocks of Canada Geese were resting; scattered amongst the flocks were Black Ducks, Mallards and Common Pintails.

After lunch we continued along Highway 2 to the Long Sault Parkway, spotting a Common Loon and a small flock of Common Mergansers along the way. Approaching the Moses-Saunders Power Dam along Highway 2, we observed Red-tailed Hawks, Northern Harriers (Marsh Hawks) and an American Kestrel (Sparrow Hawk).

At the Power Dam, we saw over 3,000 Common Mergansers feeding and, in addition, a small number of gulls, including nine Great Black-backed Gulls and one Iceland Gull. After a lengthy study, we headed back to the sanctuary to see the geese being fed. As it turned out, we were very lucky as that was the last feeding of the fall.

The final total of birds for the day was 27 species.



OFNCS

Con



Place: Unitarian Church Hall

30 Cleary Street (See map on page 42.)

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Ottawa Mushrooms: Collector's Items for the Spring

Ross Anderson

There are several old stumps along the Ottawa River near Island Park Drive where the Glistening Inky Cap (*Coprinus micaceus*) will be found during the first week of May. The tawny brown caps push up in great quantity, which is fortunate since it takes a great many to fill a pan. The caps are fragile and are often covered with earth. This makes them difficult to clean, but with winter just over the taste of fresh mushrooms is reward enough for the careful collector.

Spring is a time of anticipation, adventure and luck, in my experience. Some mushrooms, like Spring Agaric (*Pholiota* (or *Agrocybe*) *praecox*), appear regularly in numbers, but not necessarily at the same date. Others, like Morel (*Morchella esculenta*), appear at a predictable date, but not every year. At least one, the Glistening Inky Cap already mentioned, appears not only in spring, but also late in the fall, when it competes with Shaggy Mane (*Coprinus comatus*) and Inky Cap (*C. atramentarius*) for culinary honours.

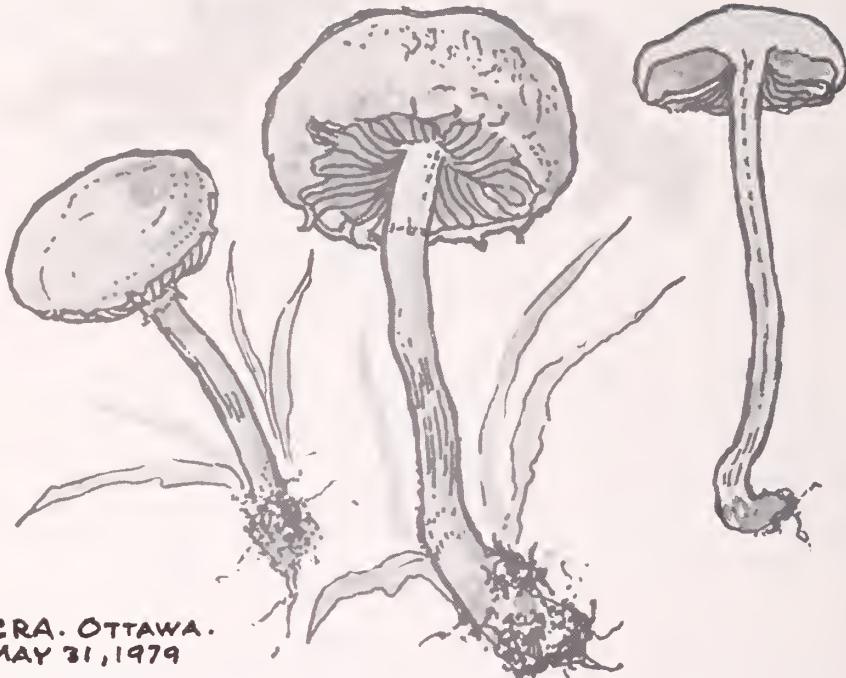
Spring is also the time we invent new ways of testing and tasting mushrooms for the table. The obvious method to begin with is to fry them in a pan with a dab of butter, pepper and salt, and perhaps a slice of bacon. For some species this may be the best way of cooking, but I would like to suggest to *Trail & Landscape* readers that this is not always the case, and you should find out for yourself which method gives the best results.

To begin with, hold back on the salt. Some very good mushrooms seem to contain their own. Also, choose a dish which extends the mushroom without overpowering it. The best way to do this is with rice. Another good way is with clear soup.

The recipe for mushroom-rice is simple and works particularly well for small caps. When your rice is prepared to your taste, add the mushrooms, lightly browned from the pan, and serve. Then, as you eat, consider if the mushroom merits to be served alone or if it needs reinforcement.

The soup we prefer is mushroom egg-drop, borrowed from the Chinese. This recipe allows for a bit of flare! To any clear stock, add chopped green onion and then, sliced mushrooms. Just before serving, add a beaten egg and stir. The result, you will discover, can be a meal in itself.

(continued on page 78)



May-June, Pholiota praecox

This mushroom is the harbinger of the season to come, among the first to appear in lawns around the Central Experimental Farm. The "early pholiota" grows singly in groups and reminds me of a silver dollar in the grass although the colour is pale gold. It comes up commonly after a heavy rain. My notes read. "taste very fine, good consistency and good colour - an excellent mushroom for the table."

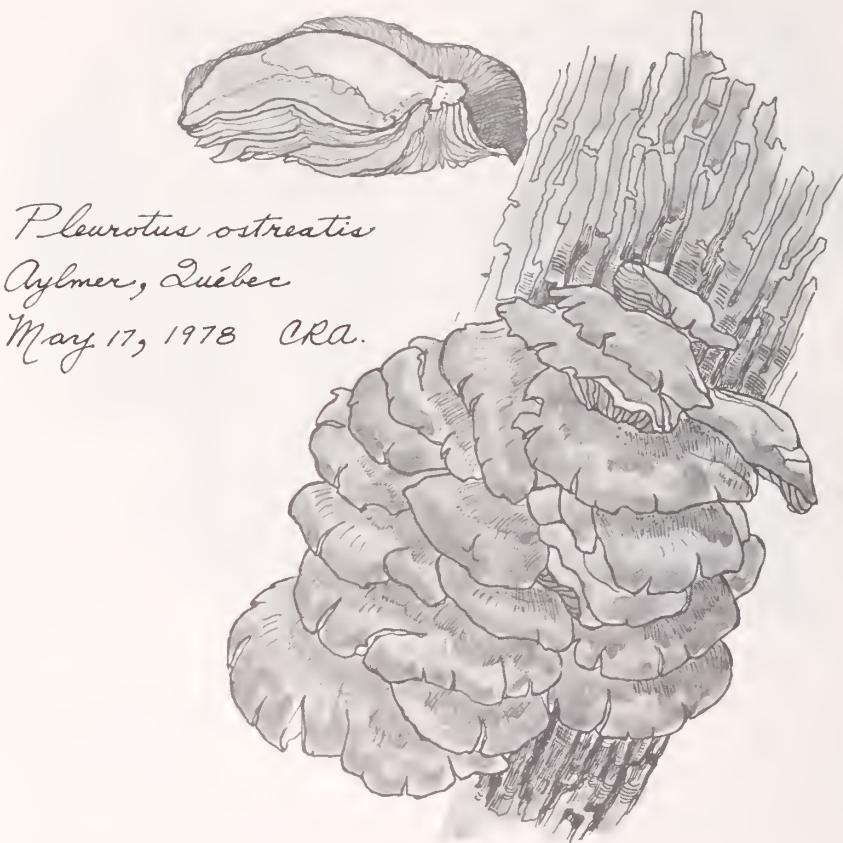


Morchella esculenta

C.R.A. Ottawa, May 17, 1981.

May-June, Morchella esculenta

A marvellous, mysterious, magical mushroom. Like gold at the end of a rainbow, leprechauns may know where morels grow, but they never tell! I have heard of collections brought home in a pail, we find them one at a time, in woodsy places around Ottawa in late May, some years, and some years not at all. The morel should be blanched in boiling water before cooking. After that, if its reputation holds, it is an epicurean delight! Please let me know where you find them and I will bring my pail.



Pleurotus ostreatus

Aylmer, Québec

May 17, 1978 CRA.

May - September, *Pleurotus ostreatus*.

There seems to be some question about this mushroom. Pomerleau describes *Pleurotus ostreatus* as having a white spore pattern. Groves points out that both *P. ostreatus* and *P. savidus* have a lilac spore pattern in mass and may in fact be the same species in North America. This specimen from an old tree stump in Aylmer had a lilac spore pattern but also a characteristic which no author in my library describes, - a very strong and unpleasant odour. We have tested this mushroom in various seasons around Ottawa but without much luck. It always tastes like it smells!.



CRA.

Coprinus micaceus. Ottawa, May 7, 1979

May - September, *Coprinus Micaceus*

The glistening inky-caps grows throughout the season and is often the first mushroom to be found in the spring. The delicate tawny brown caps push up around stumps. When collecting take care to pick the youngest cleanest caps; being fragile the caps are difficult to wash. This mushroom contains much water and makes a sort of stew when fried. The taste is mild. We like it best cooked directly with a dish like scrambled eggs.

Before all, remember the regular precautions when testing mushrooms. Each species must be clearly identified; not more than one sort should be eaten at a time; and some species must be boiled and the water discarded before cooking*.

To check the qualities of a mushroom, consult a reliable reference. It is interesting to discover that most species occur over many areas of the world in similar, if not identical, form. This is helpful because it means that references from the United Kingdom and Europe can be used with good results in North America.

One book which makes an excellent pocket reference because of the clarity of the colour illustrations was originally published in Sweden:

Mushrooms and Toadstools in Colour by Else and Hans Hvass, illustrated by E. Hohnewald, Blandford Press, London, English Edition 1961.

Another book, much larger, is interesting for its original presentation, for a complete layman's mushroom history, and also for its recipes:

The Encyclopedia of Mushrooms by Colin Dickinson and John Lucas, Orbis Publishing, London, 1979.

A North American book which also contains some excellent mushroom recipes is

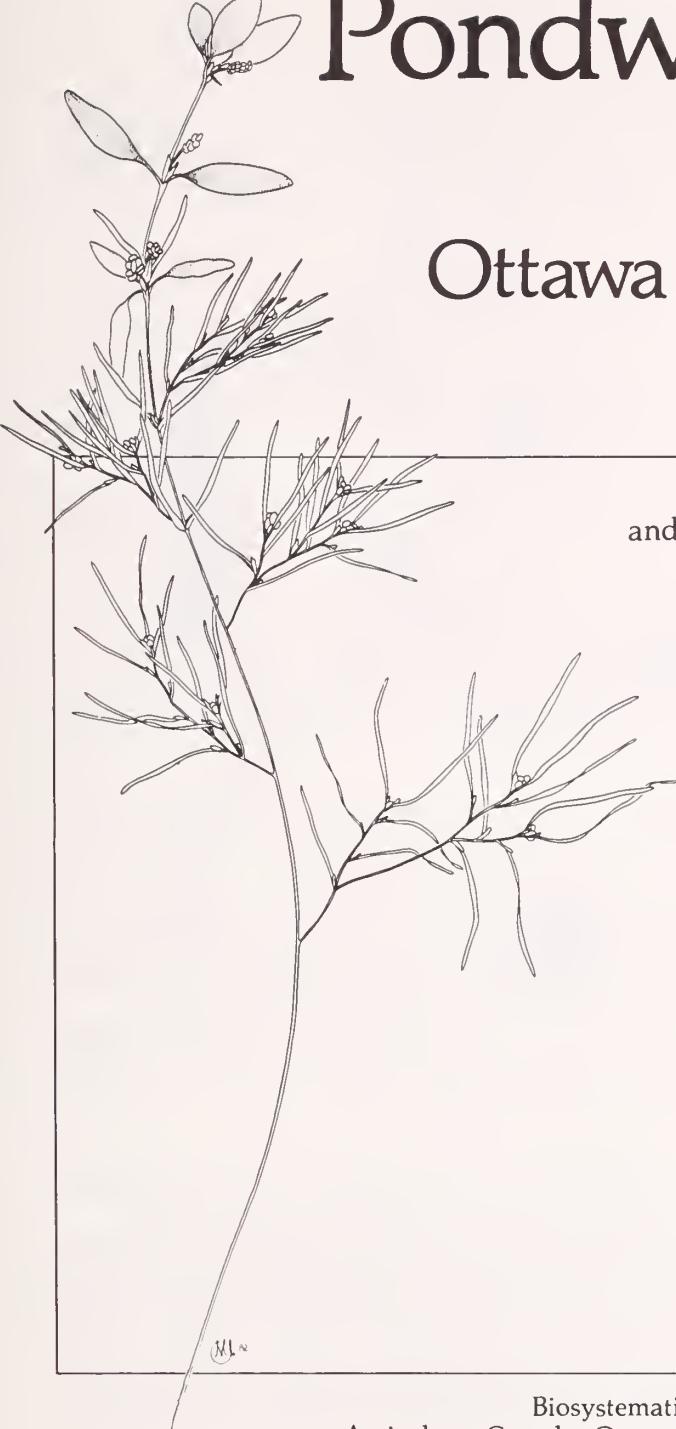
Mushrooms of North America by O.K. Miller, E.P. Dutton & Co., Inc., New York, 1972, third printing 1979.

**The Morel*, for instance is quite safe to eat, although some people react badly to large quantities. The rather similar-looking *False Morel*, on the other hand, contains toxins which can be fatal; boiling does not necessarily deactivate these toxins. Thus it is very important that people know for sure what they are eating! JMR

* * *

THE NATURE CANADA BOOKSHOP, 75 Albert Street (Room 10 in the basement), will be open on Saturdays from 10 a.m. to 4 p.m. from now on. The weekday hours are 9 a.m. to 5 p.m.

The bookshop, sponsored jointly by the Canadian Nature Federation and the Federation of Ontario Naturalists, carries a complete inventory of books of interest to naturalists, as well as binoculars, telescopes, limited edition prints and note cards.



Pondweeds

(*Potamogeton*)

of the Ottawa District

by Ian Dobson
and Paul M. Catling

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Agriculture Canada, Ottawa, Ontario K1A 0C6

INTRODUCTION

Among the aquatic plants found in the Ottawa District* and elsewhere in eastern Canada, the group which stands out as one of the most diverse and ecologically important is the genus *Potamogeton*, commonly known as the Pondweeds. It is difficult to visit any waterfront or marsh in the District which harbours plant life without finding at least one or two species belonging to this genus. In some locations, one may even find five or six species growing within close proximity to one another.

As a result of their general abundance, the Pondweeds play an important role in the functioning of aquatic ecosystems. Not only do they serve as food for waterfowl in the form of fruits and tubers, but they also provide cover for fish, frogs, turtles, and a multitude of aquatic invertebrates. In addition, environmental factors such as water currents and the amount of sunlight passing through the aquatic environment are controlled to a significant extent by Pondweeds, particularly where growth is profuse. Thus it would be of value to anyone interested in local plant life to gain some knowledge regarding the identification, distribution and ecology of these plants.

While there is a considerable degree of diversity within the Pondweeds, there are several features which serve to distinguish the group from other similar aquatic plants. Among the more characteristic features are the alternately arranged leaves that have a prominent midvein and the flowers which form a cylindrical spike or cluster.

The two groups of plants most commonly confused with the Pondweeds are the Water Stargrass (*Heteranthera dubia* (Jacq.) MacM.) and some of the Knotweeds (*Polygonum* spp.). Water Stargrass differs from the Pondweeds in having leaves with numerous parallel veins but lacking any noticeable midvein. The venation of the Knotweeds consists of a branching network arising from the midvein. In contrast, the venation of Pondweed leaves consists of a prominent midvein and secondary veins parallel to it. Wild Celery (*Vallisneria americana* Michx.) may occasionally be confused with some species of Pondweeds as well, but the lack of any noticeable stem in the Wild Celery usually clears up any identification problem.

An interesting feature of many Pondweeds is the presence of two morphologically distinct types of leaves. The leaves found floating at the water surface are broad and firm in texture, whereas the submerged leaves are usually more membranous and may be either broad, or long and thin, depending on the species (Figure 1). Many species never develop floating leaves and some exhibit floating leaves on only certain plants in a population.

* The Ottawa District is the area within a circle of 50 km radius and centred on the Peace Tower, Ottawa.

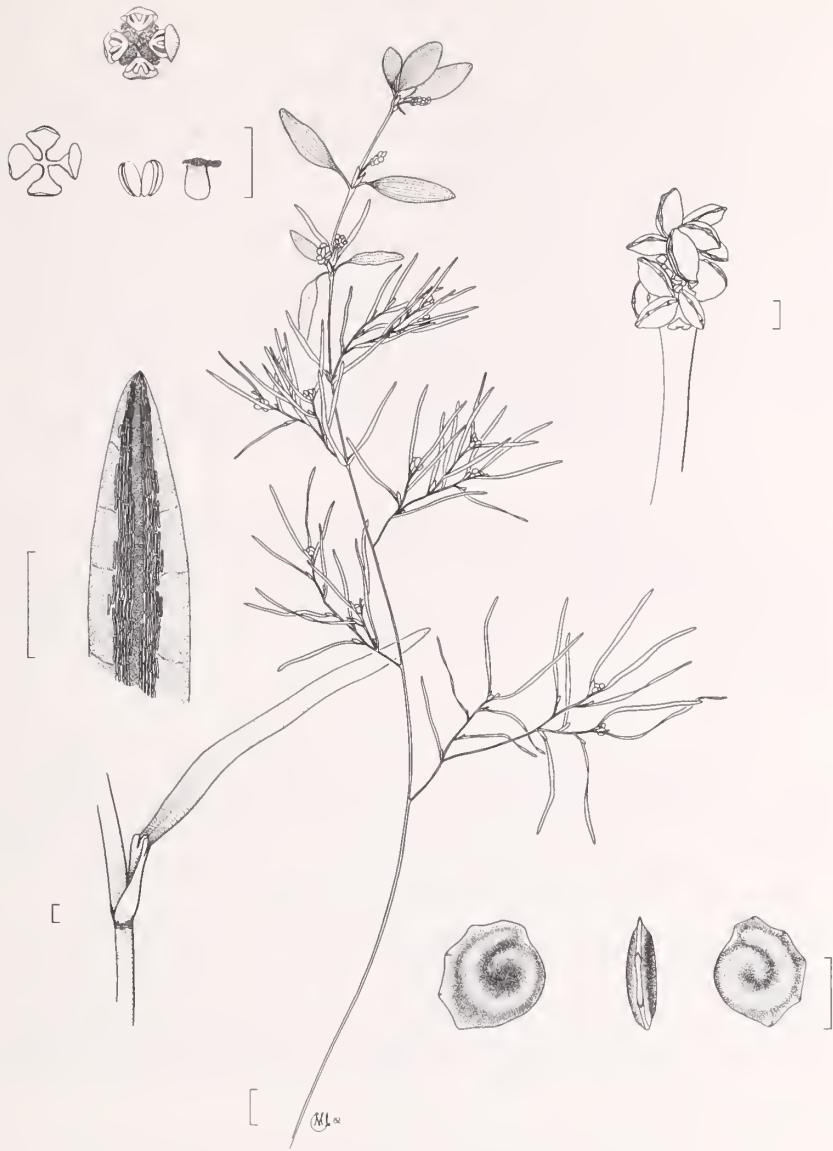


Figure 1. *Potamogeton spirillus* (Aylmer, Quebec). Upper left, flower from above and, from left to right, perianth, anther and pistil, with scale = 1 mm. Middle left, section of leaf, with scale = 1 mm. Lower left, section of stem with leaf and adnate stipule, scale = 1 mm. Centre, plant habit, scale = 1 cm. Lower right, three different views of the fruit, scale = 1 mm. Upper right, stalk with maturing fruit. Drawings: Marcel Jomphe.

These leaves, when present, are often very useful aids in species identification.

The Ottawa area is surprisingly rich in Pondweed species. All but one (*P. pulcher* at Rondeau Park) of the species found in Ontario and 21 of the 29 species known in Canada have been recorded, 16 of them in the Ottawa River alone. The section of the Ottawa River in the Ottawa District is remarkable for this Pondweed diversity in such a small area (see Riley 1979, p. 3), and it is on a par with Sparrow Lake in Muskoka, an area well known for its aquatic plant diversity. Several Pondweed species are fairly selective in their choice of habitat, particularly with respect to water chemistry (Hellquist 1980). The fact that the Ottawa District contains a wide variety of aquatic habitats ranging from the soft-water (acid) lakes in some areas north of Hull to the more alkaline waterways on the Ontario side of the District may be partially responsible for some of the species diversity found here.

It is also interesting to note that the Pondweeds have not been collected nearly as extensively as many other plant groups. As a result, the possibilities of finding new locations for many of the species or even finding new records for the District are fairly good. Several species which may occur here, but are as yet unrecorded, have been included, therefore, and these are indicated with brackets.

The preparation of this guide included a survey of recent literature, collection of data from the herbaria of the National Museum (CAN) and the Department of Agriculture (DAO), and field studies. The distribution maps are based exclusively on herbarium specimen records, and the key is adapted from recent literature with modifications based on our own preferences. One species new to the District (*P. filiformis*) is included, and status reported here for some species differs from that reported by Gillett and White (1978) due to either increase in local abundance (*P. crispus*) or revision of herbarium identifications. Although sight records and published records are not included on the maps since they may be unreliable, some published reports of local Pondweed distribution may be useful (for example, Aiken and Gillett 1974).

While many of the species found in the District are quite distinctive and easy to identify, others are much more difficult to separate, particularly to the variety level, and may require examination with a hand lens or even a dissecting microscope. An attempt has been made in the following key to use the most conspicuous characters possible and to deal mainly with vegetative features, as these are often the only ones available. The size and shape of Pondweed leaves tend to vary considerably within a species, however, and hybrids between similar species are not uncommon. One sometimes has no choice but to examine some of the less prominent characters for a positive identification.

KEY TO THE PONDWEEDS OF THE OTTAWA DISTRICT*

- la. Leaves and stipules adnate forming a sheath and ligule, the leaf attached to and diverging from the sheath above the node (Figure 2A, next page) 2
- 2a. Stipules adnate to leaf base for more than 10 mm. Plants all lacking differentiated floating leaves. Fruit usually lacking keel, and embryo not distinctly coiled 3
- 3a. Leaves auricled at bases, 3-8 mm wide, and distinctly two-ranked.
Leaf margins finely serrated 1. *P. robbinsii*
- 3b. Leaves not auricled at bases, 0.2-2.0 mm wide, and not distinctly two-ranked. Leaf margins entire 4
- 4a. Leaf tips acute and sharp-pointed. (Use hand lens.) Fruit 3.0-4.5 mm long, having a short beak 2. *P. pectinatus*
- 4b. Leaf tips obtuse or blunt-tipped, sometimes notched. (Use hand lens.) Fruit 2.0-3.0 mm long, lacking conspicuous beak 5
- 5a. Leaf sheaths, formed by leaf bases and adnate stipules, close around stem, less than 2.0 mm wide. Spikes widely interrupted, especially in fruit 6
- 6a. Plants tall, 0.3-1.0 m. Stipules on lower portion of stem slightly inflated, disintegrating early. Leaves 0.5-2.0 mm wide 3. (*P. filiformis* var. *occidentalis*)
- 6b. Plants short, 0.1-0.3 m. Stipules on lower portion of stem tightly clasping, not disintegrating. Leaves 0.2-0.8 mm wide 3. *P. filiformis* var. *alpinus*
- 5b. Leaf sheaths loose around stem, those at base of stem 2.0-5.0 mm wide. Spikes shortly interrupted 4. (*P. vaginatus*)
- 2b. Stipules adnate for less than 10 mm. Differentiated floating leaves absent or present. Fruit with dorsal keel, embryo distinctly coiled 7
- 7a. Differentiated floating leaves 3-7 nerved, apices acute. Adnate portion of stipules mostly shorter than free ligule. Submersed leaves 0.1-0.6 mm wide. Fruit usually with dorsal keel and two shoulder keels 5. (*P. bicupulatus*)
- 7b. Differentiated floating leaves 5-15 nerved, apices acute or obtuse. Adnate portion of stipule mostly longer than free ligule. Submersed leaves 0.5-2.0 mm wide. Fruit usually with dorsal keel and rounded shoulders (Figure 1) 6. *P. spirillus*
- 1b. Leaves and stipules free, the leaf attached to and diverging directly from the node (Figure 2B) 8
- 8a. Leaf margins toothed. Fruit with curved beak 2.0-3.0 mm long. Leaves all submersed, oblong, rounded at apex 7. *P. crispus*
- 8b. Leaf margins entire. Fruit with beak less than 2.0 mm or beak absent. Leaves various 9
- 9a. Submersed leaves linear with parallel margins, 0.1-10.0 mm wide; ovate lanceolate leaves present or absent. (Note that linear submersed leaves may occasionally be lacking particularly in *P. natans*, *P. oakesianus*, *P. nodosus* and *P. epihydrus*, but the former two belonging to this couplet are the only two in our range to which the following combination of characters apply: uppermost floating leaves with flat or heart-shaped bases and a sharp bend where the petiole joins the leaf, and petioles 1 1/2 to 2 times as long as the blades. *P. epihydrus* differs from the other three in having the lower portions of the stem flattened.) 10
- 10a. Median band of lacunae prominent on submersed ribbon-like leaves (Figure 2C). Leaves 2.0-10.0 mm wide. Differentiated floating leaves often present. Fruit with broad dorsal keel (0.2-1.2 mm) and sharp shoulder keels 11

* A Glossary follows the Key.

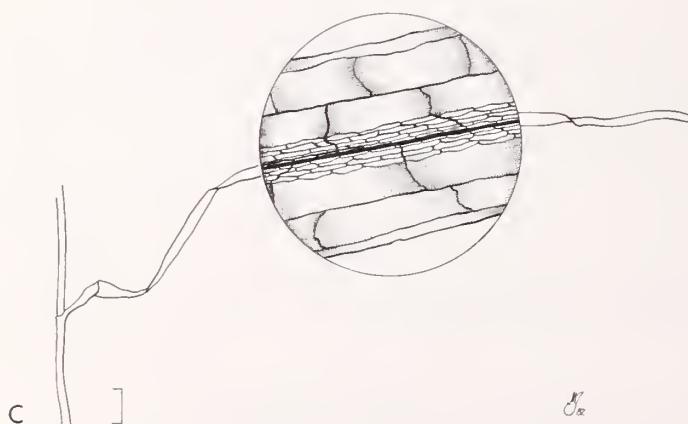
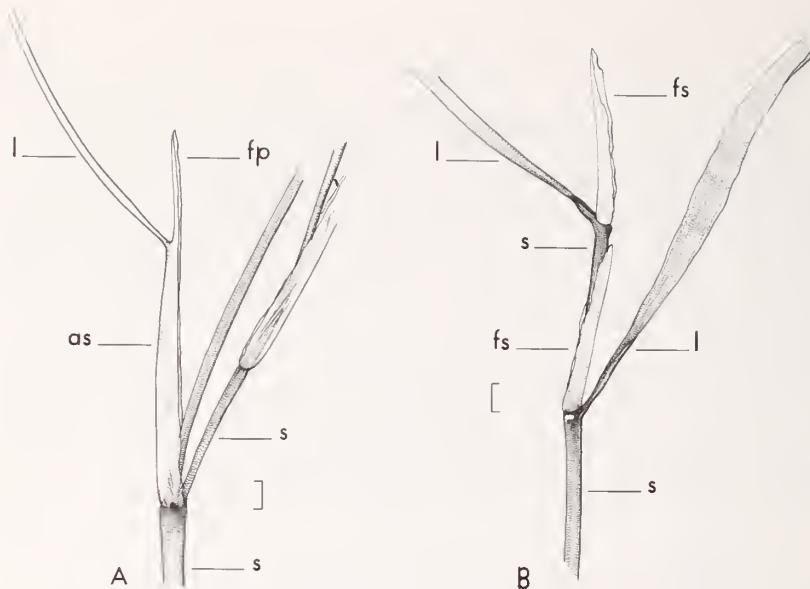


Figure 2. Details of *Potamogeton pectinatus*, *P. pusillus* var. *tenuissimus* and *P. epihydrus*.

- A. adnate stipule of *P. pectinatus* (Russell, Ontario),
 - B. free stipule of *P. pusillus* var. *tenuissimus* (Papineau Co., Quebec, Jenkins 5458 (DAO)),
 - C. magnified portion of leaf of *P. epihydrus* (Cumberland, Ontario).
- All three scales shown indicate 1 mm.
as = adnate stipule, fp = free portion of adnate stipule, fs = free stipule, l = leaf, s = stem.
- Drawings: Marcel Jomphe.

- 11a. Leaves 5-10 mm broad, 7-13 veined; fruit 3-4.5 mm long, 3-3.6 mm broad 8. *P. epihydrus* var. *epihydrus*
- 11b. Leaves 1-8 mm broad, (3) 5-7 veined; fruit 2.5-3.5 mm long, 2-3 mm broad 8. *P. epihydrus* var. *ramosus*
- 10b. Median band of lacunae absent or not prominent on submersed leaves, 0.1-3.2 mm wide, or submersed leaves absent. (*P. obtusifolius* may be considered to have prominent median band of lacunae in absence of comparison with *P. epihydrus* but differs from the latter in having nodal glands and lacking differentiated floating leaves.) Differentiated floating leaves absent or present. Fruit with keel less than 0.2 mm wide 12
- 12a. Leaves thread-like, mostly less than 1.0 mm wide and with less than 3 veins, tapering to a long slender tip. Peduncle 3-20 cm long, one per plant 13
- 13a. Plants producing characteristic thick winter buds (turions, Figure 3) from mid-July onwards; leaves to 1.0 mm wide; annuals with short rhizomes (to 2 cm) or non-rhizomatous 14
- 14a. Winter buds with thick and rather short, needle-like leaves, those at the base barely surpassing the bud; nodal glands obscure; (plants with linear leaves only, usually not producing flowers or fruit) 11. *P. vaseyi*
- 14b. Winter buds with leaves similar to the normal leaves, not thickened or needle-like, those at the base usually surpassing the bud; amber-coloured nodal glands prominent (almost as wide as the stem). (Plants with only linear leaves frequently fruiting) 17. (*P. pusillus* var. *gemmiparus*)



Figure 3. Winter buds of, from left to right,
 a. *P. pusillus* var. *tenuissimus* (Papineau Co., Quebec, Jenkins 5458 (DAO)),
 b. *P. pusillus* var. *pusillus* (Cumberland, Ontario),
 c. *P. pusillus* var. *gemmiparus* (Comté de Lavioline, Quebec, Gauthier 2273 (MT)), and
 d. *P. vaseyi* (Cumberland, Ontario). The scale to the lower left indicates 1 mm. Drawings: Marcel Jomphe.

- 13b. Plants without winter buds; leaves 0.1-0.5 mm wide; perennial plants of deep acid water, with elongate rhizomes (to 20 cm) and a single submersed peduncle (to 20 cm long) on each erect branch 9. (*P. confervoides*)
- 12b. Leaves not thread-like, various widths, not tapering to long slender tip, and often with more than 3 veins. Peduncle usually less than 6.0 cm long, often several per plant 15
- 15a. Submersed leaves 15-25 nerved, more than 2.0 mm wide. Stem strongly flattened and half or more width of leaves 10. *P. zosteriformis*
- 15b. Submersed leaves 1-5 nerved. Stem not strongly flattened 16
- 16a. Differentiated floating leaves absent or if present mostly less than 10 mm wide with 5-9 nerves (mostly 7). Submersed leaves flattened and leaf-like 17
- 17a. Differentiated floating leaves often present. Submersed leaves 0.1-0.5 mm wide, tapering to a sharp, pointed apex. Fruit only on plants with differentiated floating leaves 11. *P. vaseyi*
- 17b. Differentiated floating leaves absent. Submersed leaves 0.5-4.0 mm wide, apices various 18
- 18a. Stipules coarsely fibrous, whitish, the older ones shredding, leaving persistent fibres. Bases of winter buds strongly ribbed 19
- 19a. Peduncles less than 1.3 cm long. Fruit 3.0-4.0 mm long. Leaves 3-nerved, tapering to a bristled tip and with a band of lacunae along midrib 12. (*P. hillii*)
- 19b. Peduncles longer than 1.5 cm. Fruit 2.0-3.0 mm long. Leaves 3-7 nerved, tapering to a bristled tip or with a band of lacunae along midrib, or neither condition (not both) 20
- 20a. Leaf apices tapering to sharp, often bristled tips. Leaves 3-5 nerved, 0.5-2.5 mm wide. Nodal glands obscure or absent 13. *P. strictifolius*
- 20b. Leaf apices obtuse (often mucronate). Leaves mostly 5-7 nerved, 1.5-2.7 mm wide. Nodal glands usually conspicuous 14. (*P. friesii*)
- 18b. Stipules delicate, whitish green or brownish, the older ones disintegrating and not leaving persistent fibres. Bases of winter buds not strongly ribbed 21
- 21a. Leaves 2.0-3.5 mm wide, very obtuse to rounded with prominent lacunae along midrib, 3-nerved. Nodal glands conspicuous (0.5 mm or more across). Fruit 3.0-4.0 mm long 15. *P. obtusifolius*
- 21b. Leaves 0.3-3.0 mm wide, obtuse to acute without prominent lacunae along midrib. Nodal glands absent or present (if present, smaller and less conspicuous than those of *P. obtusifolius*). Fruit less than 3.0 mm long (except 3.0-4.0 mm in the case of *P. hillii*) 22
- 22a. Peduncles less than 1.3 cm long. Nodal glands absent or obscure. Leaves acute or bristle-tipped. Fruit keeled 23
- 23a. Fruit 3.0-4.0 mm long, 3-keeled. Leaves sharp pointed, often bristled-tipped, with narrow band of lacunae often present. Stipules slightly fibrous, not connate ... 12. (*P. hillii*)
- 23b. Fruit less than 3.0 mm long with thin, sharp dorsal keel. Leaves acute but not bristle-tipped, lacunae absent. Stipules delicate, connate 16. *P. foliosus*

- 21b. Peduncles 1.1-6.0 cm long. Nodal glands conspicuous.
Leaves various. Fruit rounded, lacking keel 24
- 24a. Leaf apices acute. Inflorescence usually consisting
of 2-4 distinct interrupted whorls of flowers. 1-3
peduncles per plant. Leaves with up to 2 rows of
lacunae along both sides of midrib. Stipules mostly
connate. (Use dissecting microscope.)
..... 17. *P. pusillus* var. *pusillus*
- 24b. Leaf apices obtuse to acute. Inflorescence crowded.
More than 3 peduncles per plant. Leaves with up to
5 rows of lacunae along both sides of midrib. Stip-
ules mostly convolute (rolled at edges). (Use dis-
secting microscope.) 17. *P. pusillus* var. *tenuissimus*
- 16b. Differentiated floating leaves present, 1.2-6.0 cm wide,
7-37 nerved, with sharp bend in petiole at base of leaves.
Submersed leaves thick and petiole-like, often decayed and
absent at flowering time 25
- 25a. Differentiated floating leaves cordate at base, 2.0-6.0
cm wide, 4.0-12.0 cm long, 21-37 nerved. Fruit 3.5-4.5 mm
long, obscurely keeled. Petiole pale at point of attach-
ment with leaf. Submersed leaves 0.8-2.0 mm wide . 18. *P. natans*
- 25b. Differentiated floating leaves rounded or acute at base,
0.8-2.2 cm wide, 2.5-5.0 cm long, 7-21 nerved. Fruit
3.0-3.4 mm long, prominently keeled. Petiole not pale
at point of attachment with leaf. Submersed leaves 0.3-
1.0 mm wide 19. (*P. oakesianus*)
- 9b. Submersed leaves non-linear without parallel margins, 10.0-75.0 mm
wide (or as narrow as 1.0-2.0 mm in some varieties and terrestrial
forms of *P. gramineus*, but then under 5.0 cm long unlike species
in couplet 9a); ovate or lanceolate leaves always present 26
- 26a. Submersed leaves sessile (but not clasping) or petioled. Dif-
ferentiated floating leaves absent or present 27
- 27a. Submersed leaves 24-37 nerved, strongly arched along midrib.
Differentiated floating leaves with more than 27 nerves
..... 20. *P. amplifolius*
- 27b. Submersed leaves less than 21 nerved, not arched. Differ-
entiated floating leaves with up to 27 nerves 28
- 28a. Submersed leaves with blades 1.0-2.5 cm wide on petioles
5.0-11.0 cm long, apex acute but without awl-like tip.
Fruit 3.5-4.0 mm long with knobby dorsal keel and shoulder
keels. Petioles of floating leaves up to 25 cm long often
exceeding blades in length 21. *P. nodosus*
- 28b. Submersed leaves of various widths, sessile (occasional
petiole to 4.0 cm), with apex acute or awl-tipped. Fruit
less than 3.5 mm long with keel absent or present but not
knobby. Floating leaves absent or present. Petioles of
floating leaves various 29
- 29a. Submersed leaves 7-nerved, apices obtuse or acute with
band of lacunae along midrib. Reddish colour on drying.
Stipules blunt. Fruit tawny-olive, pedicelled 22. *P. alpinus*
- 29b. Submersed leaves 3-17 nerved, apices acute or awl-like,
without band of lacunae along midrib. No reddish colour
on drying. Stipules acute. Fruit reddish-brown, not
pedicelled 30
- 30a. Submersed leaves sessile or petiolate to 6.0 cm, 9-17
nerved, 5.0-20.0 cm long. Stem rarely or once branched.
Fruit 3.0-4.0 mm long, sharp-keeled. Floating leaf
blades longer than the petioles 23. *P. illinoensis*
- 30b. Submersed leaves always sessile, 3-9 nerved, 1.5-4.5 cm
long. Stem branched. Fruit 2.0-2.5 mm long, keel
rounded or absent. Floating leaf blades slightly
longer than, to much shorter than, petioles 31

31a. Most leaves elliptic or oblanceolate, 3.0-15.0 mm wide, 5-9 nerved	32
32a. Larger submersed leaves 5-7 nerved, up to 8.0 mm wide 24. <i>P. gramineus</i> var. <i>gramineus</i>	
32b. Larger submersed leaves 7-9 nerved, up to 15 mm wide 24. <i>P. gramineus</i> var. <i>maximus</i>	
31b. Most leaves with sides almost parallel, 2.0-3.0 mm wide, 3-nerved 24. (<i>P. gramineus</i> var. <i>myriophyllus</i>)	
26b. Submersed leaves clasping stem. Floating leaves absent	33
33a. Leaves 10-20 cm long, ovate-oblong. Apices boat-shaped, often splitting when pressed. Older stipules persistent and con- spicuous. Rhizome spotted rusty red 23. <i>P. paelongus</i>	
33b. Leaves 1-10 cm long, roundish-ovate to lanceolate. Apices flat. Older stipules shredding into persistent fibres or disintegrating completely	34
34a. Leaves ovate-lanceolate to narrowly lanceolate, 3-10 cm long, with 7-33 coarse nerves. Stipules coarse, shredding into persistent fibres on lower parts of plant. Cavity in endo- carp loop in fruit (more evident in dried specimens) 26. <i>P. richardsonii</i>	
34b. Leaves orbicular to ovate, 1-6 cm long, with 7-17 delicate nerves. Stipules delicate, disintegrating completely on lower parts of plant. No cavity in endocarp loop of fruit	27. <i>P. perfoliatus</i>

GLOSSARY

- Adnate.* growing together, a condition in which the leaf is fused to the stipule (Figure 2A) for a distance before branching off. Stipules are recognized as adnate if they are attached to the leaf base above the node (point of leaf attachment to the stem).
- Apex* (pl. *apices*). leaf tip.
- Auricled* (leaves). leaves which are lobed at the basal edges.
- Binate.* united around the stem.
- cordate.* heart-shaped (as in the leaf base of *P. natans*).
- Embryo.* the coiled structure within the fruit. In several species of Pondweed the embryo can be seen as a distinct coil through the walls of the fruit. In other species with thicker-walled fruit, the embryo is not visible externally.
- Endocarp loop.* the loop formed by the embryo coil (Figure 1). The presence or absence of a cavity in the tissue surrounded by the loop can be determined by cutting the fruit in half longitudinally. The cavity will appear as a soft, dark area in the middle of otherwise solid tissue. (This is more conspicuous in dried fruit.)
- Entire.* (referring to the leaf margins) continuous, lacking serrations.
- Inflorescence.* the floral axis and flowers.
- Keel.* the ridge(s) running along the edge of a fruit (Figure 1). In addition to the main dorsal keel found on the fruit of many Pondweeds, several species also have two, less prominent, shoulder keels on either side of the dorsal keel. Other species have no keels at all.
- Lacunae.* the delicate cellular bands bordering the midrib in some species of Pondweeds (Figure 2C). These bands usually appear lighter than the rest of the leaf and function as flotation devices to keep the leaves erect. They are found only on submersed leaves.
- Lanceolate.* leaf shape similar to a lance-head, longer than wide, and widest below the middle.
- Ligule.* the free portion of a stipule.
- Linear.* leaf shape which is long and narrow with parallel sides over most of its length.
- Mucronate.* having a short, sharp, slender point.
- Nodal glands.* very small (0.1-0.5 mm), round, translucent, amber-coloured protuberances found on the stem at the point of leaf attachment (one pair per node). A hand lens is usually required to see them.
- Oblong.* leaf shape which is broad without tapering for much of its length.
- Orbicular.* almost circular.

Ovate. leaf shape broader than lanceolate.

Pedicel. the stalk on the fruit (or flower) attaching it to the peduncle.

Peduncle. the stalk bearing the flowers and fruit.

Sessile. without a petiole.

Stipules. vegetative appendages at the base of the leaf. These may be entirely free from the leaf (attached only at the node on the stem (Figure 2B)) or adnate for a certain distance (Figure 2C). They may be coarse, leaving shreds of veins on older parts of a plant, or delicate. Delicate stipules usually break off completely from older parts of a plant without leaving any shreds.

Winter buds (turions). firm, shortened, thickened shoots with crowded stipules and reduced leaves (Figure 3). These serve as an overwintering device for vegetative propagation the following year.

THE PONDWEEDS AND THEIR HABITATS

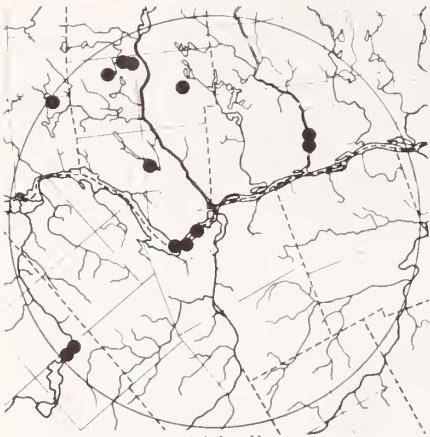
1. *Potamogeton robbinsii* Oakes. This very distinctive species occurs in fairly deep water. It is easily recognized by its finely toothed, two-ranked leaves which are auricled at their bases. Occasionally flowers are found, but fruiting specimens are very rare.

2. *Potamogeton pectinatus* L. *P. pectinatus* is very common in the District, particularly along the Rideau River. It often forms large, bushy mats in shallow water and is considered an important food source for waterfowl due to its prolific production of fruit and tubers. The plant is recognized by its acute leaf tips and slender, adnate, stipular sheaths.

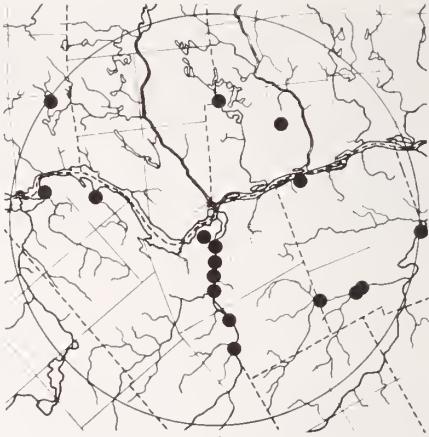
3. *Potamogeton filiformis* Pers. Known in the District only from Castor Creek at Embrun (Catling & Dodson, DAO, 1982). It resembles *P. pectinatus* and is generally found growing in similar habitats; occasionally the two species are found growing together. *Potamogeton filiformis* is distinguished from *P. pectinatus* by its blunt leaf apices and from other species by its slender, adnate, stipular sheaths. Two varieties have been recognized, var. *occidentalis* (Robbins) Morong and var. *alpinus* (Blytt) Aschers and Graebner (which includes the previously recognized varieties *borealis*, *filiformis* and *macounii*). Local plants are referable to var. *alpinus*.

4. (*Potamogeton vaginatus* Turcz.) While there are no records of this plant for the Ottawa District, it has been found in the St. Lawrence River south of the area and should be watched for in the waters of some of the cooler rivers and streams. It differs from *P. filiformis* in having rather broad, inflated, stipular sheaths. Some specimens of *P. filiformis* var. *occidentalis* with inflated, stipular sheaths could possibly be confused with this species, although the sheaths of *P. vaginatus* are usually broader and more robust.

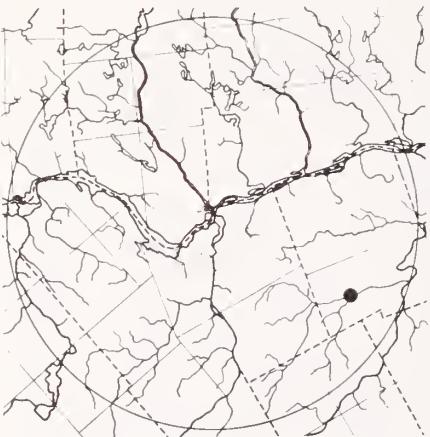
5. (*Potamogeton bicupulatus* Fernald). This species has not been recorded in the Ottawa District yet but is a good possibility, particularly in some of the soft water (acidic) lakes north of the Ottawa River. (See Reznicek and Bobbette 1976).



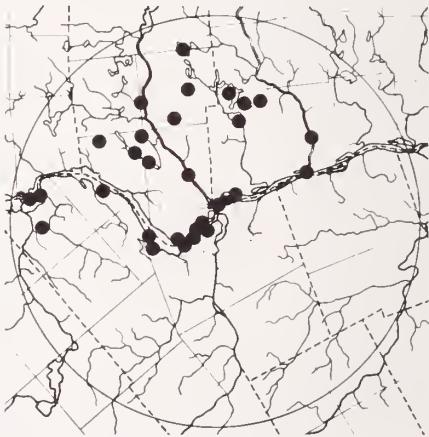
Potamogeton robbinsii



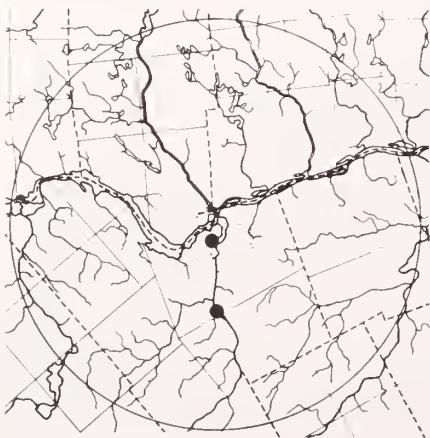
Potamogeton pectinatus



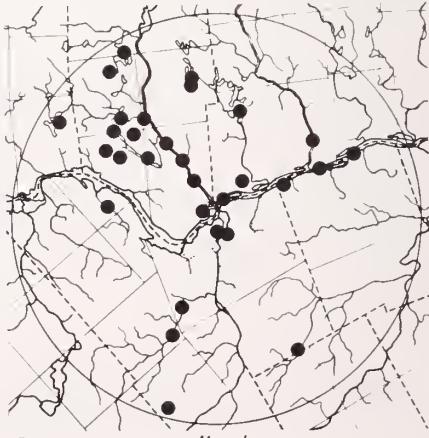
Potamogeton filiformis var. *alpinus*



Potamogeton spirillus



Potamogeton crispus



Potamogeton epihydrus

6. *Potamogeton spirillus* Tuckerman. *Potamogeton spirillus* is common and widespread in the District. It can be distinguished from *P. bicupulatus* by the absence of shoulder keels on the fruit. Specimens lacking fruit can be identified by the somewhat wider leaves and the fact that the ligules are generally shorter than the adnate portion of the stipules. (The reverse is true in *P. bicupulatus* (Reznicek and Bobbette 1976).

7. *Potamogeton crispus* L. This very distinctive species was imported to North America from Europe and is now widespread (Stuckey 1979). It was first collected in the Rideau River in 1955. It is now common in both the Rideau and lower Ottawa systems. Ability to thrive in polluted (eutrophic) waters may be part of the reason for its success. It is readily identified by its toothed, crisped and blunt-tipped leaves and long-beaked fruit. Fruiting occurs in early summer, and fruiting specimens are either rare or easily overlooked.

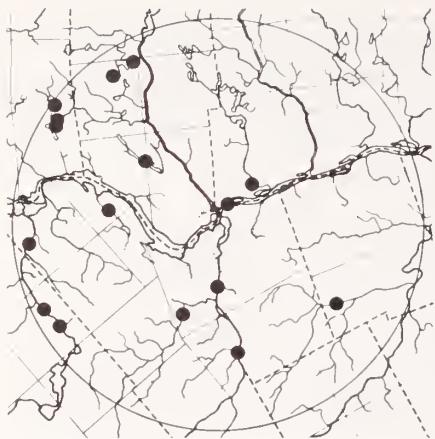
8. *Potamogeton epihydrus* Raf. *Potamogeton epihydrus* is a very common plant in lakes, rivers and streams of the District, particularly in water under 2 m deep. It can be distinguished from other Pondweeds by its broadly keeled fruit and submersed, ribbon-like leaves having a broad band of lacunae along the midrib (Figure 2C). In the absence of submersed leaves and fruit, some specimens may appear similar to *P. nodosus*, but *P. epihydrus* has the lower portion of the stem distinctly flattened, whereas *P. nodosus* has a stem which is rounded in cross-section.

The variety *ramosus* is not sharply distinguished from the typical variety. Many plants from the Ottawa District appear intermediate, especially plants from the alkaline waters of the Ottawa River, Rideau River, Castor Creek and Jock River. Although plants from these latter locations are somewhat larger than plants from the neutral or acid lakes of the Canadian Shield, no plants have been seen that possess all of the characters of variety *epihydrus*. For example, a plant from the Jock River at Richmond (Dore 21719 (DAO)) has leaves with more than 7 veins but is less than 8 mm wide, and the fruits are not more than 3 mm wide.

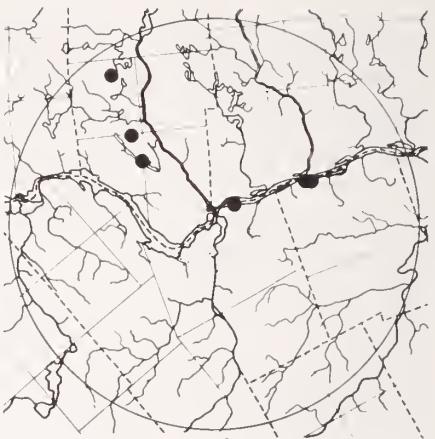
9. (*Potamogeton confervoides* Reichenb.) This very distinctive plant should be watched for in deep, acid waters north of the Ottawa River. It is easily recognized by its very slender leaves and high degree of branching, giving it a fan-like appearance in the water. The fruits are borne on a long, solitary peduncle.

10. *Potamogeton zosteriformis* Fernald. Common throughout the District, this is the only species with both a strongly flattened stem and many-nerved, linear leaves. It develops fruit in mid to late summer.

11. *Potamogeton vaseyi* Robbins. This is a very rare plant in Ontario (Argus and White 1977) and probably also in Quebec, but



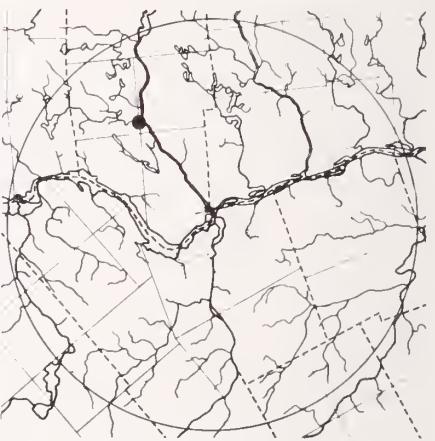
Potamogeton zosteriformis



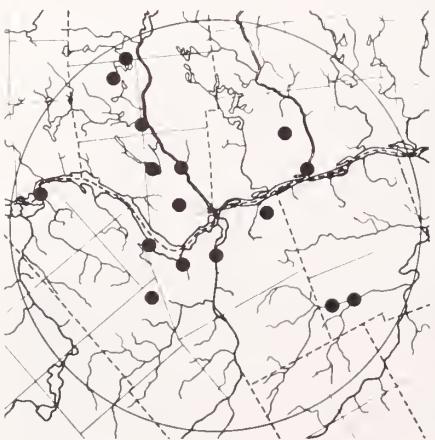
Potamogeton vaseyi



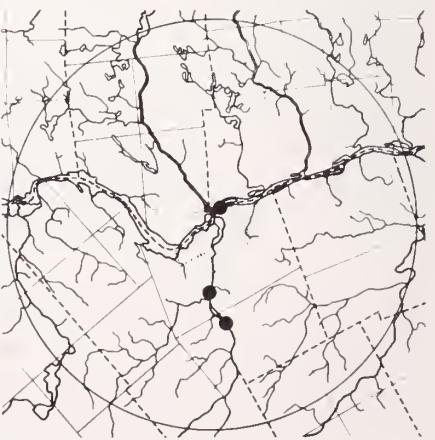
Potamogeton strictifolius



Potamogeton obtusifolius



Potamogeton foliosus



Potamogeton pusillus var. *pusillus*

there is a surprising number of locations where it is found in the District (Meech Lake, Lac Notre Dame and Ottawa River).

Potamogeton vaseyi is the only local species with the combination of free stipules, small linear leaves below and ovate leaves above (the latter not always floating and rarely over 1 cm wide and 1.5 cm long). The veins are impressed on both the upper and lower surfaces of the ovate leaves but especially so on the lower surface. This is a soft and delicate species, in contrast with *P. pusillus* with which it sometimes occurs. The free stipules (5-10 mm long) of both linear and ovate leaves disintegrate into a mass of whitish fibres starting at the tip.

Specimens of *P. vaseyi* without floating leaves may be distinguished from other species by the absence of nodal glands and by the zig-zag shape of the turions and the stiff basally-curving turion leaves.

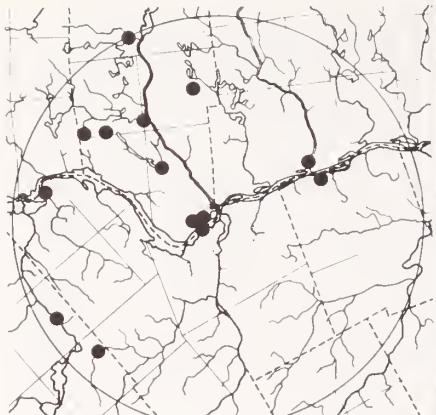
12. (*Potamogeton hillii* Morong) Although widespread, Hill's Pondweed is extremely rare and local in distribution. It should be sought in shallow alkaline ponds or streams. It may appear similar to *P. foliosus* but differs in having large fruit, bristle-tipped leaves, and a band of lacunae along the midrib. It may also be confused with *P. strictifolius* (see description of that species), but, in general, most specimens of *P. hillii* are quite distinctive.

13. *Potamogeton strictifolius* Bennett. While there is only one very old record for this plant in the Ottawa District (North Wakefield (=Alcove), Macoun, 1893), several stations are known to the south and the west. Identification is made by the coarse, whitish stipules and acute to bristle-tipped apices. The rare *P. hillii* has shorter peduncles and larger fruit, as well as a narrow band of lacunae along the midrib. *P. strictifolius* occurs in moderately alkaline lakes and rivers.

14. (*Potamogeton friesii* Rupr.) There are no records of this Pondweed for the Ottawa District, but it has been collected near Prescott to the south. Although it is similar to *P. strictifolius* in that it has coarse stipules, the leaf apices are obtuse and often mucronate. It is found in the same habitat as *P. strictifolius* and thus has a good chance of being found in the District.

15. *Potamogeton obtusifolius* Mert. & Koch. As in the case of *P. strictifolius*, this species is known in the District only from North Wakefield (=Alcove) Quebec, where it was found by John Macoun in 1893. The fruit and peduncles are similar to *P. hillii*, but the leaves are usually very obtuse. *Potamogeton friesii* also has obtuse leaves, but, unlike *P. obtusifolius*, it has more than three nerves, and the stipules are coarser.

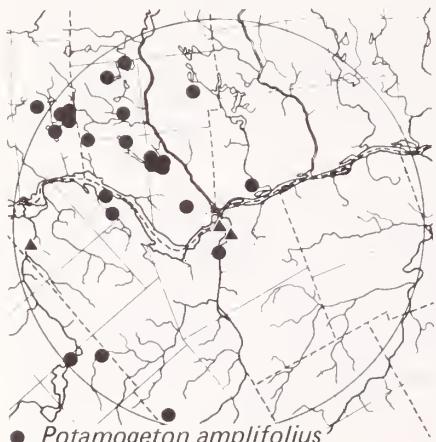
16. *Potamogeton foliosus* Raf. A locally common species, *P. foliosus* is similar to *P. hillii* in having short peduncles, but the fruit of *P. hillii* is larger and three-keeled.



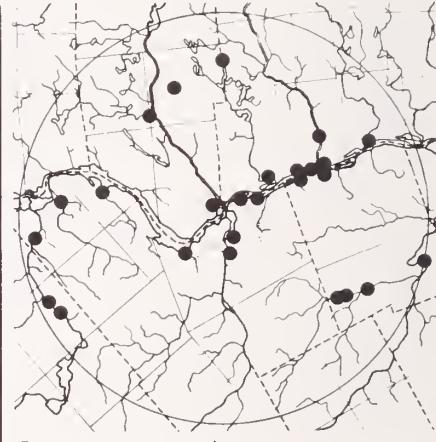
Potamogeton pusillus var. *tenuissimus*



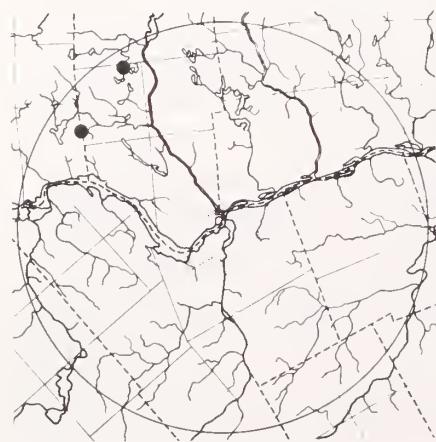
Potamogeton natans



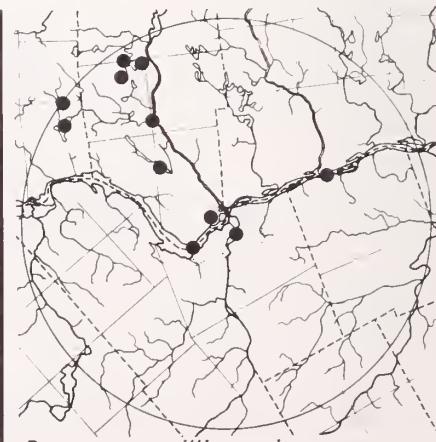
● *Potamogeton amplifolius*
▲ *Potamogeton amplifolius*
X *P. amplifolius* × *P. richardsonii*



Potamogeton nodosus



Potamogeton alpinus



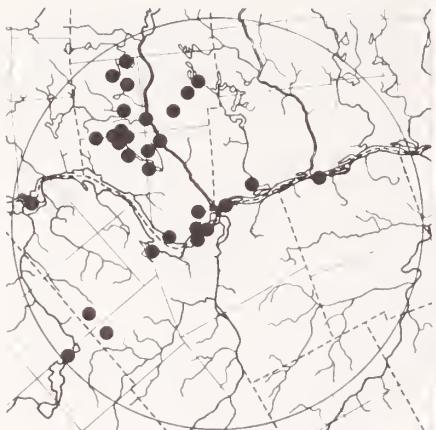
Potamogeton illinoensis

17. *Potamogeton pusillus* L. Two varieties of this species have been found in the District: var. *pusillus* and var. *tenuissimus* Mert. & Koch. The var. *genniparus* Robbins is a softwater form (Hellquist 1980) that has not yet been found here. The var. *pusillus* is known only from the Rideau River and Rockcliffe Park (although probably can be found elsewhere), whereas var. *tenuissimus* is locally widespread. Included in var. *tenuissimus* are those plants originally known as *P. berchtoldii* Fieber (see Haynes 1974). *Potamogeton pusillus* can be distinguished from *P. foliosus* by the lack of a dorsal keel on the fruit. If specimens are sterile, positive identification becomes more difficult. The presence of nodal glands on *P. pusillus* is sometimes a useful character, although these glands may be obscure on some specimens. The winter buds (turions) help to separate the varieties of *P. pusillus* from *P. vaseyi* when differentiated floating leaves are not present on the latter (Figure 3). Winter buds of var. *tenuissimus* have been shown to require cold treatment for germination (Sastroutomo 1981).

18. *Potamogeton natans* L. One of our more common species, *P. natans* can be found usually in the shallower water (under 2 m) of lakes and rivers throughout the Ottawa District. It is easily recognized by its cordate floating leaves, except for rare cases when it may have rounded or even slightly tapered leaf bases if it is growing in fast-moving water. In such cases, it can be separated from *P. nodosus*, *P. amplifolius* and other species with broad floating leaves by the presence of a sharp bend in the petiole and a light coloured area at the junction of the petiole with the leaf. The petiole-like submersed leaves of *P. natans* often decay and disappear by the time the plant sets fruit in mid-summer.

19. (*Potamogeton oakesianus* Robbins) Although similar to the preceding species in many respects, *P. oakesianus* is generally a more delicate plant. It lacks the pale petiole of *P. natans* and the leaves and stem are generally narrower. There is likely to be little confusion with other species (except *P. natans*) since the petiole-like submersed leaves are quite distinctive. *P. oakesianus* occurs in acidic waters of ponds, streams and bog pools. Although plants corresponding to the description of *P. oakesianus* in some respects have been reported from Gatineau Park, there are no definite records.

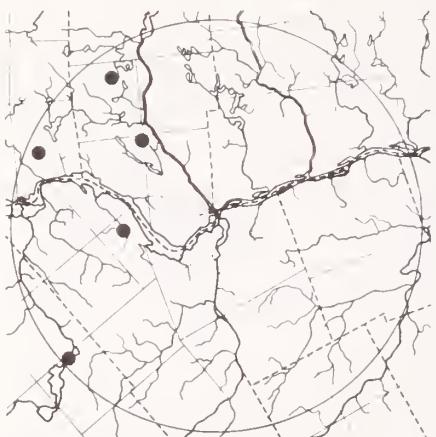
20. *Potamogeton amplifolius* Tuckerman. This very common and distinctive species can be found in most lakes and large rivers in the District. It can be recognized by its broad, arched, submersed leaves and large numbers of nerves. Hybrids of this species with *P. richardsonii* have been found, and it may hybridize also with *P. paelongus*. Recognition of hybrids is often quite difficult, particularly when the identification is based only on morphological features; however, hybrid plants generally possess characters from both parental species and usually fail to set viable fruit.



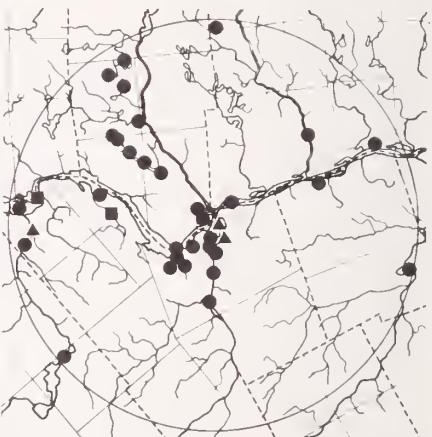
Potamogeton gramineus var. *gramineus*



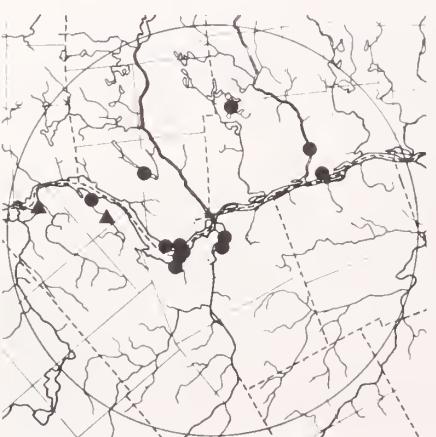
Potamogeton gramineus var. *maximus*



Potamogeton praelongus



- *Potamogeton richardsonii*
- ▲ *Potamogeton amplifolius* X *richardsonii*
- *Potamogeton perfoliatus* X *richardsonii*



- *Potamogeton perfoliatus*
- ▲ *Potamogeton perfoliatus* X *richardsonii*

21. *Potamogeton nodosus* Poiret. This plant is widespread in the District, being found in rivers and occasionally in lakes in water under 2 m deep. While the floating leaves may be quite variable, they usually taper at both ends, and the long petioles on submersed leaves are a fairly distinctive feature. Without submersed leaves, *P. nodosus* may be confused with *P. epihydrus*. (See the description of this latter species.)

22. *Potamogeton alpinus* Balbis. This is a rather uncommon species in the Ottawa District, being restricted to two locations (Lake Bernard and Holly Lake) in Gatineau County. One of the more characteristic features of *P. alpinus* is the reddish colour of the leaves, particularly in dried specimens. The band of lacunae along the midrib of the submersed leaves also serves to separate this plant from similar species such as *P. illinoensis*. New locations for *P. alpinus* are most likely to be found in the cold waters of spring-fed lakes and streams.

23. *Potamogeton illinoensis* Morong. Though fairly common in the District, *P. illinoensis* has seldom been found south of the Ottawa River. This may be due, however, to undercollecting in the southern part of the District rather than an actual pattern of distribution. *Potamogeton illinoensis* can be distinguished from other species by its sharp-pointed, broad submersed leaves. Mature fruiting specimens are often found without floating leaves.

24. *Potamogeton gramineus* L. This is a much more common plant than the closely related *P. illinoensis*. Three varieties have been described, var. *gramineus*, var. *maximus* Morong, and var. *myriophyllus* Robbins. Only the first two have been recorded in the District. While var. *gramineus* is the most common, the varieties blend considerably, and only extremes are identified easily. *Potamogeton gramineus* hybridizes also with other species, especially *P. illinoensis*; such hybrids are often difficult to distinguish from *P. gramineus* var. *maximus*. An unusual narrow-leaved form of *P. gramineus* with adnate stipules has been found at one location in New York (Hellquist 1978).

25. *Potamogeton praelongus* Wulfen. While this species has not been recorded often in the District, it is fairly common in the Rideau Lakes, southwest of the area. With its boat-shaped leaf apices and whitish stem, *P. praelongus* is seldom confused with other species. Like *P. crispus*, this species develops fruit in early summer, long before other local Pondweeds. It is usually found in lakes and deep, slow rivers, rising from water 2-3 m deep.

26. *Potamogeton richardsonii* (Benn.) Rydb. This is a fairly common species in the District. It is very similar to *P. perfoliatus* (next species), and intermediates, perhaps hybrids, are frequent. Originally, *P. richardsonii* was known as *P. perfoliatus* L. var. *richardsonii* Benn., which may be, in fact, a

more realistic classification.

27. *Potamogeton perfoliatus* L. *Potamogeton perfoliatus* is not nearly as common as *P. richardsonii* and is generally considered to be a more delicate plant. While the stipules on *P. perfoliatus* tend to disintegrate earlier than those of *P. richardsonii*, this is not always evident. The absence of a cavity in the endocarp loop of the fruit seems to be a more consistent character, although it is sometimes difficult to see unless the fruit is dried. Although *P. perfoliatus* has leaves which are much smaller and rounder than those of *P. richardsonii*, one study has shown that continuous variability in leaf shape is controlled by environmental factors, especially calcium content, the leaves tending to be wider when subject to higher calcium levels (Pearsall and Hanby 1925).

ACKNOWLEDGEMENTS

We are most grateful to Marcel Jomphe for preparing the illustrations. The National Museum of Natural Sciences and Agriculture Canada kindly provided the material upon which this study is based.

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Bluebird Trail * 1982

C. Graham MacNay

During the past summer my Bluebird Trail in the Dunrobin area again yielded a fair crop of fledglings. Initially, 34 boxes were occupied by Bluebirds; 187 young hatched, but two died in one box and one in each of four others.

Tree Swallows were, as usual, the main competitors for boxes; 37 of their nests were removed, including nests built a second and sometimes a third time in the same box. The increase in Tree Swallow population has forced me to abandon part of the Trail. Other occupants included House Wrens in one box, House Sparrows in two, mice in three, and a nest entirely roofed over with grass in another that may have been built by House Wrens.

Vandalism has decreased, but human curiosity resulted in the occasional box roof being removed by pulling out the nails, rendering it useless and causing the loss of any eggs or young that may have been present.

Point Pelee Excursion

DATE: May 13 - 16 (inclusive), 1983

LEADERS: Bruce Di Labio and Steve O'Donnell

Your Club, through Travelways, is offering an excursion to Point Pelee to observe birds and whatever else might be of interest. We may also visit Rondeau Park on the way home.

Little need be said to the members of our Club about Point Pelee. This tiny peninsula of marsh, beach and forest is a birding hot-spot and is recognized as one of the most important migratory areas in North America. It is one of the premier birding locations in the world. Probably no other place in North America attracts more naturalists than Point Pelee National Park in the spring. Did you know that more than 300 species of birds have been recorded in the Park, with an impressive total of 250 or more species recorded every spring? During the rush of springtime migration, it is not uncommon to see over 100 species on a given day.

ACCOMMODATION will be in the Best Western Continental in Windsor, west of the Park. Costs are as follows:

single occupancy	(1 single bed)	\$241.00 per person
twin occupancy	(2 single beds)	\$180.00 per person
double occupancy	(1 double bed)	\$173.00 per person
triple occupancy	(2 double beds)	\$158.00 per person
quadruple occupancy	(2 double beds)	\$146.00 per person

NOTE THAT THESE COSTS INCLUDE BUS FARE BUT NOT MEALS.

MEALS will be provided at the motel with breakfast at 7:00 -7:30 a.m. and dinner at 6:00 p.m. Box lunches will be provided on Saturday, Sunday and Monday, and there will be a cold buffet on Friday upon arrival (9-10 p.m.). Meals will be paid for individually; they are not included in the above-quoted costs. You should bring a lunch with you on Friday.

ITINERARY

Friday, May 13: leave Ottawa 9:00 a.m.; arrive Windsor 7:00 p.m.

Saturday and Sunday: breakfast 7:00-7:30 a.m.
depart for Pelee 8:00 a.m.
depart from Pelee 5:00-6:00 p.m.
dinner 6:00-7:00 p.m.; evening free

There will be one hour free time Saturday and Sunday afternoons.

Monday, May 16: breakfast 7:00-7:30 a.m.; depart 8:00 a.m.
noon stopover at Rondeau Park (2 hours)
arrive Ottawa 8:00 p.m. *(continued)*

1. Reservations should be made as soon as possible, by calling the Club number, 722-3050. Payment in full must be received by April 1. For full refund, notice of cancellation must be made before April 1. Send your payment for this trip (by cheque or money order payable to The Ottawa Field-Naturalists' Club) to Ellaine Dickson, 2037 Honeywell Avenue, Ottawa K2A OP7.
 2. Expect to see more people than birds at the Park at this time of the year. Pedestrian traffic is expected to be heavy.
 3. Binoculars and warm clothing are essential. Rain gear should be taken, but we hope will not be used.
 4. The bus is at our disposal; it will stop or go according to our requests.
 5. If you get the Club answering service when you call the Club number, please leave your name and phone number and we will contact you.
-

National Museum Activities

Audubon Wildlife films will be presented in the Auditorium of the National Museum of Natural Sciences as follows:

Saturday, April 16, 2 p.m., *Wild Canada: Coast to Coast*
with John Wilson;
Sunday, May 22, 2 p.m., *The Marsh* with Thomas A. Sterling.

On Tuesday, March 8, at 8 p.m., there will be a slide talk, *Grassland Suite*, presented jointly by the National Museum of Natural Sciences and the Canadian Nature Federation. The show will illustrate the unusual wilderness of grasslands, foothills and badlands of the western high plains.

The Art of Louis Paul Jones, a travelling exhibition of the Indiana State Museum, comprises 75 sculpted miniature wildlife models by a master taxidermist. The showing, which began on February 1, will end on April 3.

The February/March issue of *Canadian Geographic* contains an article of interest to naturalists, particularly those who admire Canada's native orchids. The article, *Wild Orchids: exquisite, irreplaceable and vulnerable*, is six pages long. It was written by Betty Baird and features 19 photographs by Allan and Joyce Reddoch.

Coming Events

arranged by the Excursions and Lectures Committee
Paul Catling (996-1665), Chairman

Times stated for excursions are departure times. Please arrive earlier; leaders start promptly. If you need a ride, don't hesitate to ask the leader.

Date and AMPHIANS IN SPRING
time to be Leader: Stephen Darbyshire (749-9317)
decided Meet: to be decided
 The success of this outing is very dependent on weather. If you are interested in participating, telephone the Club number, 722-3050, before March 10. When a date and meeting place for the outing have been fixed, you will be notified by phone. Bring a strong flashlight and a long-handled dip net; wear rubber boots and warm clothes.

Sunday SKI TRIP TO EXPLORE THE MADAWASKA WILDERNESS IN
6 March WINTER
 Leaders: Sheila and Harry Thomson (234-0845)
 Bring a hearty lunch for this all-day outing. All persons wishing to go, phone the leaders by Thursday, March 3, to arrange further details.

Wednesday* OFNC MONTHLY MEETING
9 March A CLOSER LOOK AT POINT PELEE
8:00 p.m. Speaker: Michael Runtz
 Meet: Auditorium, National Museum of Natural Sciences, Metcalfe and McLeod Streets
 Having worked as park naturalist at Point Pelee, Michael has become a widely known authority on the area. The park has many attractions for the naturalist apart from the impressive bird migrations. Michael's presentation will be fully illustrated with colour slides featuring Spotted Turtle, Prickly Pear Cactus, Fox Snake, Swamp Rose Mallow, Prothonotary Warbler, and many others.
* Please note the Wednesday meeting day.

- Sunday WINTER WEEDS
13 March
9:00 a.m. Leaders: Members of the Botany Group
 Meet: National Museum of Natural Sciences
 Metcalfe and McLeod Streets, front entrance
This outdoor workshop is designed to increase your enjoyment of winter hikes. *Weeds in Winter* by Lauren Brown will be used as a reference book. (For a limited time only, this book is available for \$6.95, hardcover, at Nature Canada Bookshop, B-10 75 Albert Street.) See the article *Winter Wildflowers in Ottawa* by Ross Anderson in the last issue of *Trail & Landscape*. Dress warmly and bring a lunch.
- Sunday VISIT TO CARLETON UNIVERSITY GREENHOUSES
27 March
2:00 p.m. Leader: Bill Illman
 Meet: Greenhouses, Carleton University. Follow the main entrance road from Bronson Avenue, keeping left at the fork. There is ample parking in Lot 3 or in the other lots.
This popular tour under Bill's enthusiastic guidance will feature an interesting variety of plants in different habitats.
- Sunday BUS EXCURSION: BIRDING AT PRESQU'ILE PROVINCIAL PARK
3 April
6:30 a.m. Leader: Bruce Di Labio (729-6267)
 Meet: Loblaws, Carlingwood Shopping Centre,
 Carling Avenue at Woodroffe Avenue
Cost: \$15.50 per person (prepaid ten days in advance)
The large flocks of migrating waterfowl gathered at Presqu'ile prior to journeying further north should be the highlight of the trip. Since this is an all-day trip, be sure to bring enough food for lunch and snacks. Dress warmly and wear waterproof footwear. Bring binoculars or, better still, telescopes.
Make your reservation for this trip by sending your cheque or money order (payable to The Ottawa Field-Naturalists' Club) to Ellaine Dickson, 2037 Honeywell Avenue, Ottawa K2A 0P7, at least ten days in advance of the trip. Include your name, address, telephone number and the name of the excursion.

Tuesday OFNC MONTHLY MEETING
12 April GULLS AND TERNS OF SOUTHERN ONTARIO
8:00 p.m. Speaker: Hans Blokpoel
 Meet: Auditorium, National Museum of Natural
 Sciences, Metcalfe and McLeod Streets
Hans has been working with the Canadian Wildlife
Service in Ottawa for twelve years. He is the
Canadian expert on gulls and terns and has comple-
ted many studies of their migration, behaviour and
ecology. The explosion in numbers of Ring-billed
Gulls will be analyzed with regard to causes and
consequences. The decline of the Common Tern in
the Great Lakes area will be considered also along
with results of recent wing tagging and other
studies on their South American wintering grounds.

Thursday LICHEN IDENTIFICATION WORKSHOP
21 April Leader: Ernie Brodo
7:30 p.m. Meet: National Herbarium of Canada,
 1505 Laperrière Avenue
The use and interpretation of keys and check, spot
and chemical tests will be demonstrated. If you
have your own keys or any lichens that you wish to
identify, please bring them along. Since the number
of participants is limited to ten, register early by
telephoning Aileen Mason (722-2279). If you have
registered but find you cannot attend, notify Aileen
as soon as possible so that someone else can take
your place.

Sunday BUS EXCURSION: HAWK MIGRATION AT DERBY HILL, N.Y.
24 April Leader: Bruce Di Labio (729-6267)
6:30 a.m. Meet: Loblaws, Carlingwood Shopping Centre
 Carling Avenue at Woodroffe Avenue
Cost: \$15.50 per person (prepaid 10 days in advance)
If weather conditions are favourable, the hawk
migration passing through Derby Hill should be spec-
tacular. Since this is an all-day trip, be sure to
bring enough food for lunch and snacks. Dress
warmly and wear waterproof footwear. Bring binocu-
lars. Canadians should bring proof of citizenship,
and non-Canadians should carry passports. Also,
binoculars, cameras and other equipment in "new"
condition should be registered with Canada Customs
either in Ottawa before departure or at the border.
Make your reservation for this trip by sending your
cheque or money order (payable to The Ottawa Field-
Naturalists' Club) to Annette Murray, 902-77 Cartier
Street, Ottawa K2P 1J7, at least ten days before the
trip. Include your name, address, telephone number,
and the name of the excursion.



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Friday OFNC SOIREE - CONVERSATION AND CO...
29 April Meet: Unitarian Church Hall, 30 Cleary Street
7:30 p.m. See the centrefold for additional details.

Sunday BIRDING AT SHIRLEYS BAY
1 May Leader: to be decided
7:00 a.m. Meet: Britannia Drive-In Theatre, Carling Avenue
Bring waterproof footwear, binoculars and insect repellent.

Saturday BIRD WALK FOR BEGINNERS
7 May Leader: to be decided
7:30 a.m. Meet: Britannia Drive-In Theatre, Carling Avenue
This walk is offered for novice birders. Binoculars are essential; insect repellent and waterproof footwear are advisable.

AN APOLOGY FROM THE EXCURSIONS AND LECTURES COMMITTEE

Steve O'Donnell had kindly agreed to conduct a session on winter bird identification on December 1, 1982.; however, well in advance of that date he informed us that he would be out of town then in connection with his work. Unfortunately, we forgot to make arrangements for a substitute leader. Our sincerest apologies to those who made a fruitless trip to the museum because of our oversight.

Paul Catling, Chairman

HELP! VAN DRIVERS NEEDED FOR THE FON CONFERENCE

Several of the excursions planned for the FON Conference to be held in Ottawa on June 3-5 will use 12 or 15 passenger vans for transportation. We will need experienced drivers with (Ontario) B, C, D, E or F type driver's licences. If you have the necessary qualifications and wish to volunteer, please contact Rick Leavens at 521-1254 (home) or 993-9334 (work).

SPECIAL THANKS to Sheila Thomson, Harry Thomson and Allan Reddoch for their tremendous help on this extra large issue. JMR

DEADLINE: Material intended for the May-August issue must be in the Editor's hands before March 5.

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